Service Manual

ViewSonic VA1903wb/VA1903wm
Model No VS11618
19” Color TFT LCD Display

Manufacture Date: Dec-25-06

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Revision History

Revision	Date	Description of changes	Approval
A00	**Dec-25-06**	**Initial Release**	**YG.WANG**

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1. Precautions And Safety Notices

1.1 SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper use or installation may cause damage to the monitor as well as the user. Carefully go over the following WARNINGS before installing and keep this guide handy.

WARNINGS

- This monitor should be operated only at the correct power sources indicated on the label on the rear end of the monitor. If you're unsure of the power supply in your residence, consult you local dealer or power company.
- Use only the special power adapter that comes with this monitor for power input.
- Do not try to repair the monitor your self as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies, even when the power cord is unplugged.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a clean, dry environment. If it gets wet, unplug the power cable immediately and consult your service technician.
- Always unplug the monitor before cleaning it .Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the glass screen.
- Keep the monitor away from magnetic objects, motors, TV sets, and transformer.
- Do not place heavy objects on the monitor or power cord.

1.2 PRODUCT SAFETY NOTICE

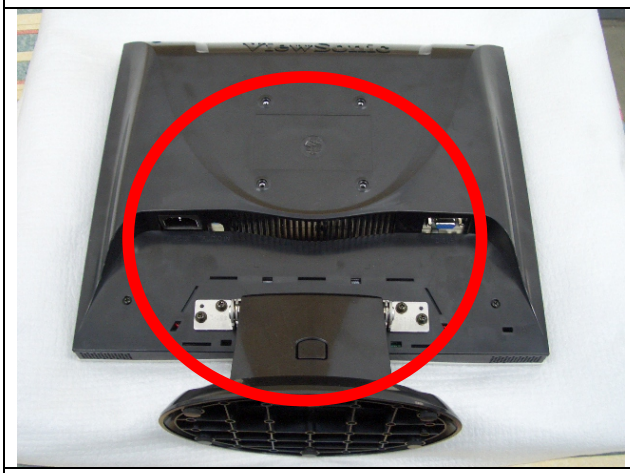
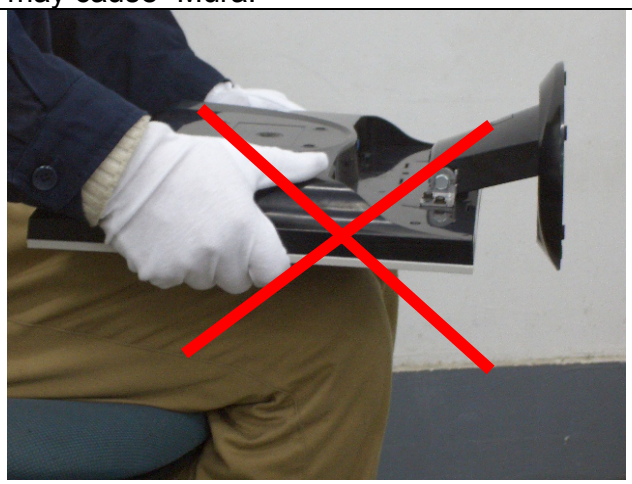
Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire ,or other hazards.

1.3 SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor(more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

1.4 HANDING AND PLACING METHODS

Correct Methods:	Incorrect Methods:
Only touch the metal frame of the LCD panel or the front cover of the monitor. Do not touch the surface of the polarizer.	Surface of the LCD panel is pressed by fingers and that may cause “Mura.”
Take out the monitor with cushions	Taking out the monitor by grasping the LCD panel. That may cause “Mura.”

Place the monitor on a clean and soft foam pad.	Placing the monitor on foreign objects. That could scratch the surface of the panel or cause “Mura.”
	
Place the monitor on the lap, the panel surface must be upwards.	The panel is placed facedown on the lap. That may cause “Mura.”
	

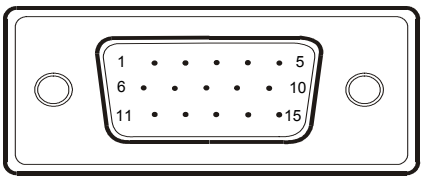
2. Specification

2.1 PRODUCT SPECIFICATIONS

LCD	Type	19.0” (full 19” wide viewable diagonal area), TFT(Thin Film Transistor),Active Matrix WXGA+ LCD
	Color Filter	RGB vertical stripe
	Glass Surface	Anti-Glate
Input Signal	Video Sync	RGB analog(0.7/1.0 Vp-p, 75ohms) Separate Syic, Fh:24-82 kHz, Fv:50-75 Hz
Compatibility	PC Macintosh	Up to 1440 x 900 Non-interlaced Power Macintosh up to 1440 x 900
Resolution	Recommended and supported	1440 x 900 @ 60, 75 Hz 1280 x 1024 @ 60, 75 Hz 1024 x768 @ 60, 70, 72, 75 Hz 800 x 600 @ 56, 60, 72, 75 Hz 640 x 480 @ 60, 75 Hz 720 x 400 @ 70 Hz
Power	Voltage	100V~240 VAC, 50/60Hz (auto switch) 1.2A
Display area	Full Scan	408.24mm(H) x 255.15mm(V) 16.07”(H) x 10.04”(V)
Operating conditions	Temperature Humidity Altitude	32°F to + 104°F(0°C to + 40°C) 10%C to + 90%(non-condensing) To 10,000 feet
Storage conditions	Temperature Humidity Altitude	-4°F to + 104°F(-20°C to + 60°C) 10%C to + 90%(non-condensing) To 40,000 feet
Weight	Physical	10.41b(4.7 kg)
Regulations		BSMI, CCC, PSB, C-Tick, VCC1, CE, GS, Ergo, Gost-R/Hygienc, SASO, TCO’03, UL/cUL, FCC-B, ICES-B, TUV-S, ENERGY STAR®
Power saving modes	On Off	Normal (green LED) <2W (orange LED)
Preset Timing Mode (pre-adjusted to VESA® 1440 x 900 @ 60 Hz) **Warning:** Do not set the graphics card in your computer to exceed these refresh rates; doing so may result in permanent damage to the LCD display.		
[1] Macintosh computers older than G3 require a ViewSonic® Macintosh adapter. To order an adapter, contact ViewSonic.		

2.2 INTERFACE DESCRIPTION

D-SUB 15 PIN CONNECTOR

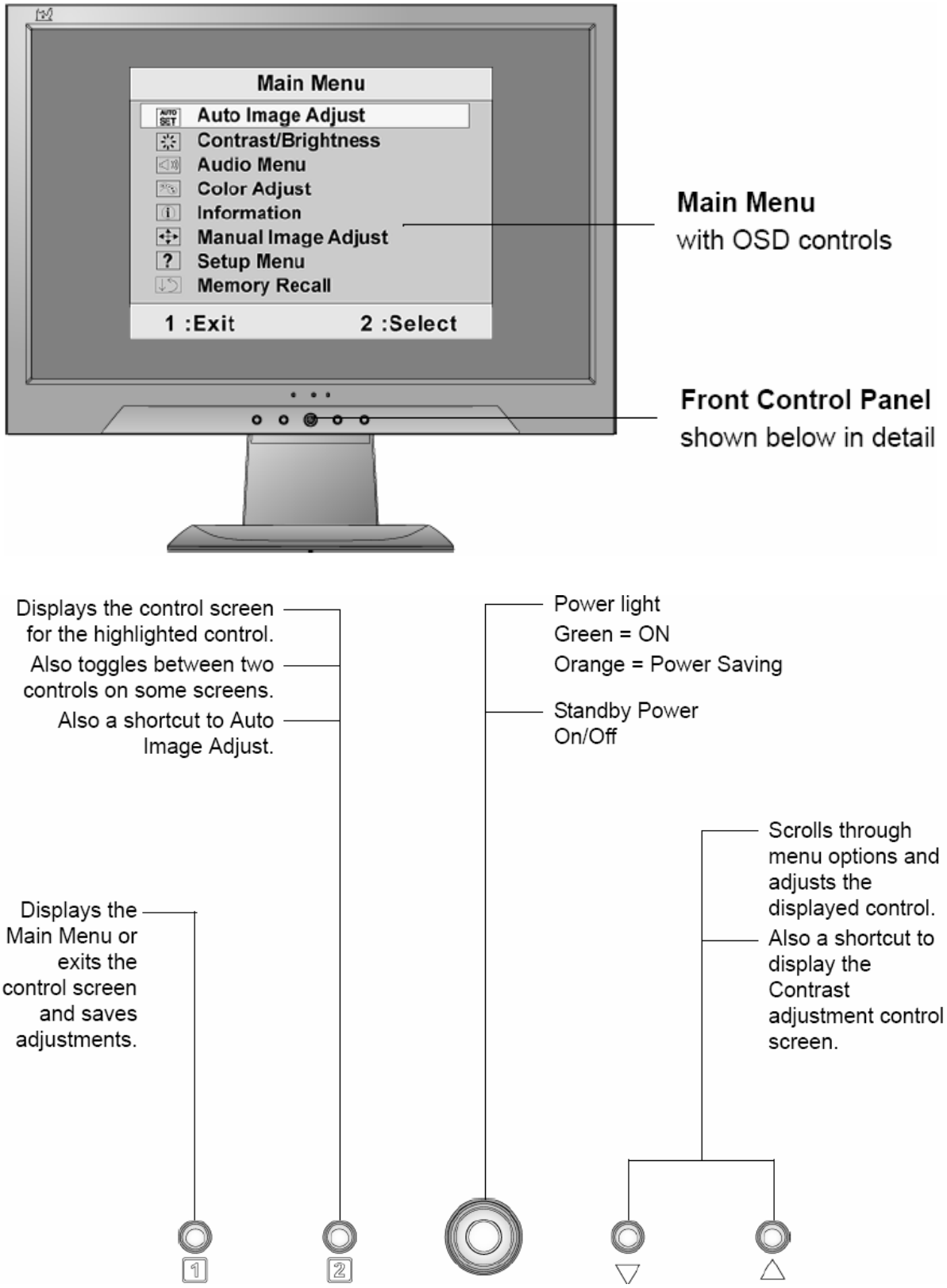


Pin Number	Pin Function
1	Red video input
2	Green video input
3	Blue video input
4	No Connection
5	Ground
6	Red video ground
7	Green video ground
8	Blue video ground
9	+5V
10	H/V sync ground
11	No connection
12	(SDA)
13	Horizontal sync (Composite sync)
14	Vertical sync
15	(SCL)

SIGNAL LEVEL

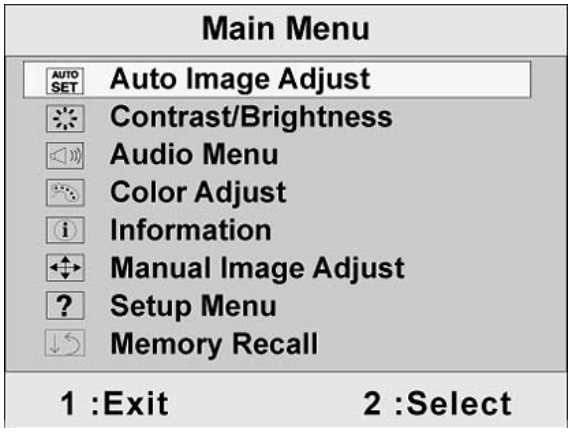
CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p(VIDEO)
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p(VIDEO)
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL
SCL	DDC1/2B	TTL

3. Front Panel Function Controls And Indicators



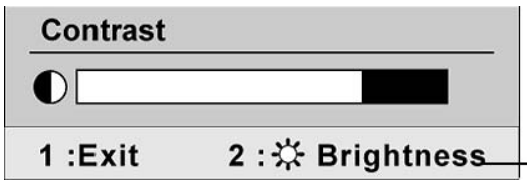
Do the following to adjust the display setting:

1. To display the Main Menu, press button [1].



NOTE: All OSD menus and adjustment screens disappear automatically after about 15 seconds. This is adjustable through the OSD timeout setting in the setup menu.

2. To select a control to adjust, press ▲or ▼ to scroll up or down in the Main Menu.
3. After the desired control is selected, press button [2]. A control screen like the one shown below appears.



The line at the bottom of the screen shows the current functions of buttons 1 and 2: Exit or select the Brightness control.

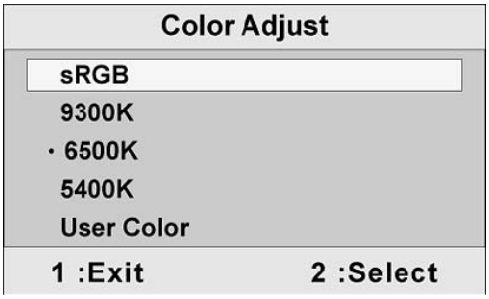
4. To adjust the control, press the up ▲ or▼ down T buttons.
5. To save the adjustments and exit the menu, press button [1] *twice*.

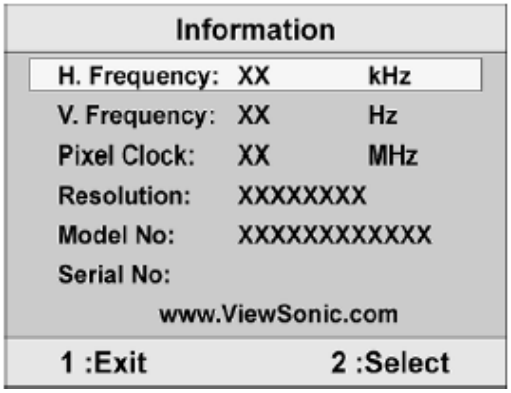
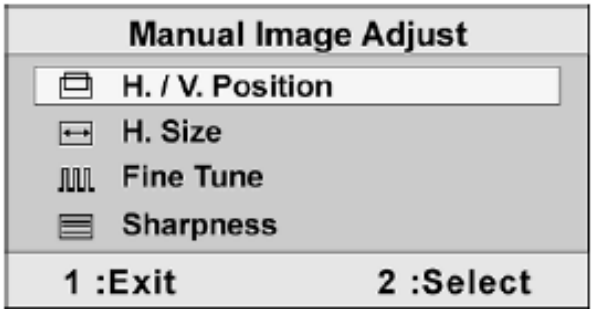
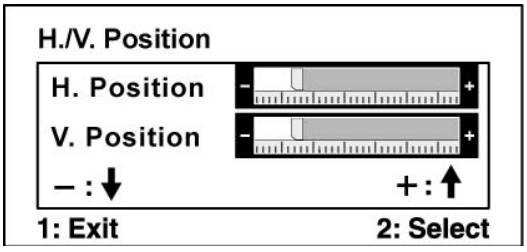
The following tips may help you optimize your display:

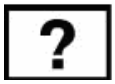
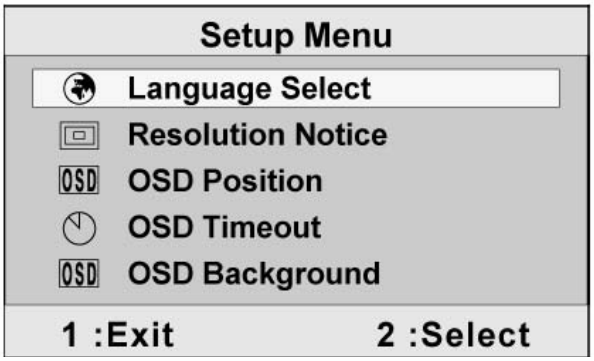
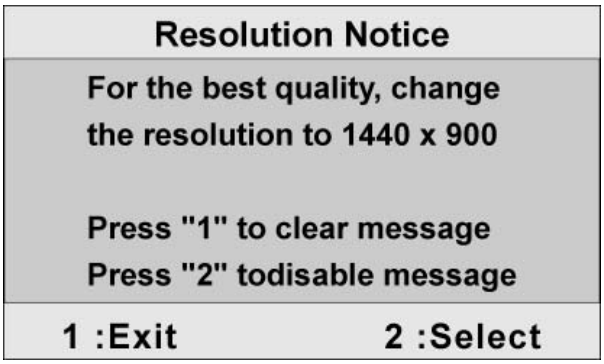
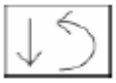
- Adjust the computer's graphics card so that it outputs a 1024 x 768 @ 60Hz video signal to the LCD display. (Look for instructions on “changing the refresh rate” in the graphics card's user guide.)
- If necessary, make small adjustments using H. POSITION and V. POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
AUTO SET	**Auto Image Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image. **NOTE:** Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.
	Contrast adjusts the difference between the image background (black level) and the foreground (white level).
	Brightness adjusts background black level of the screen image.
	Audio Adjust（**For VA1903wm only**） **Volume** increases the volume, decreases the volume, and mutes the audio. **Mute** temporarily silences audio output.
	Color Adjust provides several color adjustment modes, including preset color temperatures and a User Color mode which allows independent adjustment of red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500 Kelvin).  **sRGB-**This is quickly becoming the industry standard for color management, with support being included in many of the latest applications. Enabling this setting allows the LCD display to more accurately display colors the way they were originally intended. Enabing the intended. Enabling the sRGB setting will cause Contrast and Brightness adjustments to be disabled. **9300K-**Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting). **6500K-**Adds red to the screen image for warmer white and richer red. **5400K-**Adds green to the screen image for a darker color. **User Color** Individual adjustments for red (R), green (G), and blue (B).

	1. To select color (R, G or B) press button [2]. **2.** To adjust selected color, press ▼ and ▲. **Important:** If you select **RECALL** from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.
	Information displays the timing mode (video signal input) coming from the graphics card in the computer, the LCD model number, the serial number, and the ViewSonic® website URL. See your graphics card's user guide for instructions on changing the resolution and refresh rate (vertical frequency). **NOTE:** VESA 1280 x 1024 @ 60Hz (recommended) means that the resolution is 1024 x 768 and the refresh rate is 60 Hertz. 
	Manual Image Adjust displays the Manual Image Adjust menu.  **H. Size (Horizontal Size)** adjusts the width of the screen image. **H./V. Position (Horizontal/Vertical Position)** moves the screen image left or right and up or down.  **Fine Tune** sharpens the focus by aligning text and/or graphics with pixel boundaries.

	NOTE: Try Auto Image Adjust first. **Sharpness** adjusts the clarity and focus of the screen image.
	**Setup Menu** displays the menu shown below:  **Language Select** allows the user to choose the language used in the menus and control screens. **Resolution Notice** displays the Resolution Notice menu shown below.  **Resolution Notice** advises the optimal resolution to use. **OSD Position** allows the user to move the OSD menus and control screens. **OSD Timeout** sets the length of time the OSD screen is displayed. For example, with a “15 second” setting, if a control is not pushed within 15 seconds, the display screen disappears. **OSD Background** allows the user to turn the OSD background On or Off.
	**Memory Recall** returns the adjustments back to factory settings if the display is operating in a factory Preset Timing Mode listed in the Specifications of this manual. **Exception:** This control does not affect changes made with the User Color control, Language Select or Power Lock setting.

SHORT CUTS FUNCTION FROM THE BUTTONS

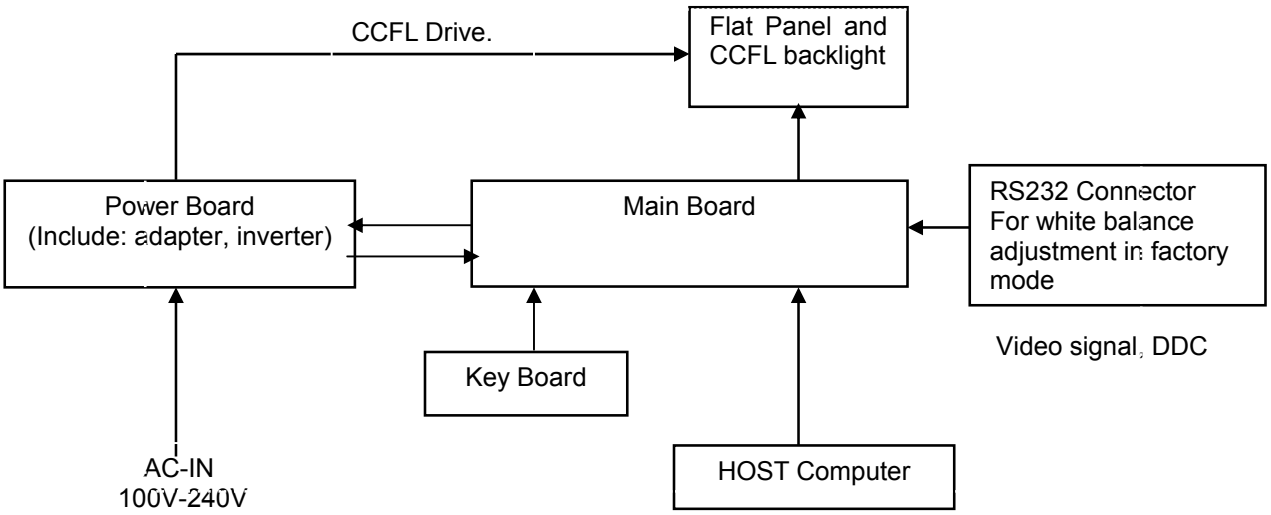
[1]	Main Menu
[2]	Input toggle（Analog or Digital；refer to Appendix D）
[▼]	Contrast adjust
[▲]	Contrast adjust
[▼] + [▲]	recall both of Contrast and Brightness to default
[1] + [2]	toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode
[1] + [▼] + [▲]	White Balance (Not shown on user's guide)
[1] + [▼]	Power Lock
[1] + [▲]	OSD Lock
No signal + [2] + [⏻]	Burning mode
Signal + [2] + [⏻]	Factory mode
Remark : All the short cuts function are only available while OSD off	

4. Circuit Description

4.1 LCD MONITOR DESCRIPTION

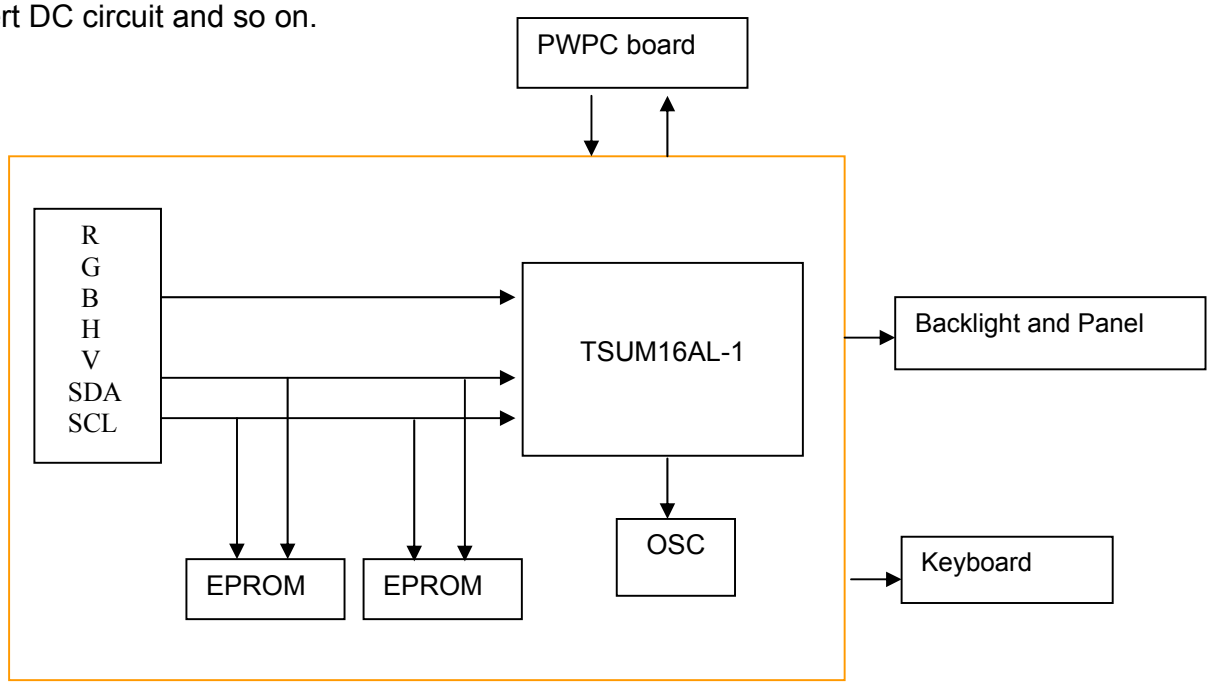
The LCD MONITOR will contain a Main Board, an Power Board, Key Board which house the flat panel control logic, brightness control logic and DDC.

Monitor Block Diagram



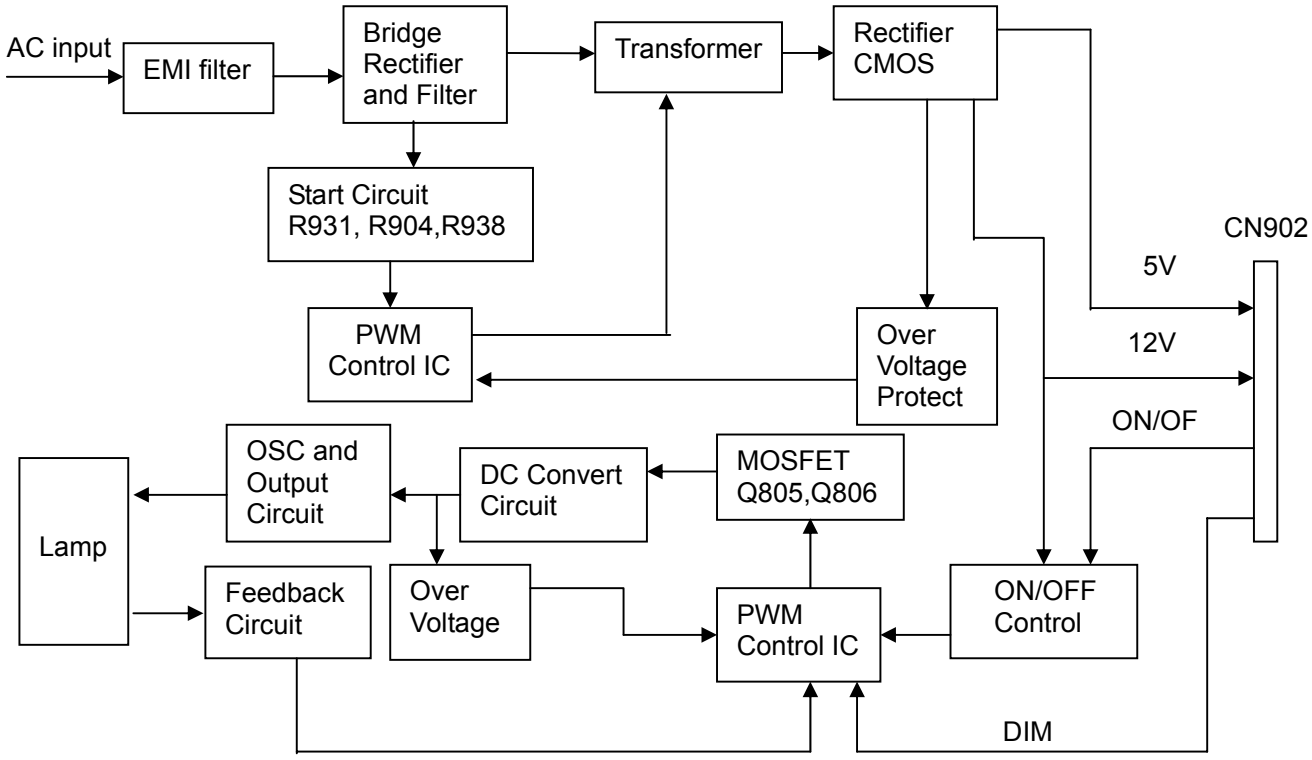
4.2 MAIN BOARD BLOCK FUNCTION DESCRIPTION

The main board contains panel control logic, brightness control logic, DDC and DC convert DC circuit and so on.



4.3 PWPC BOARD BLOCK FUNCTION DESCRIPTION

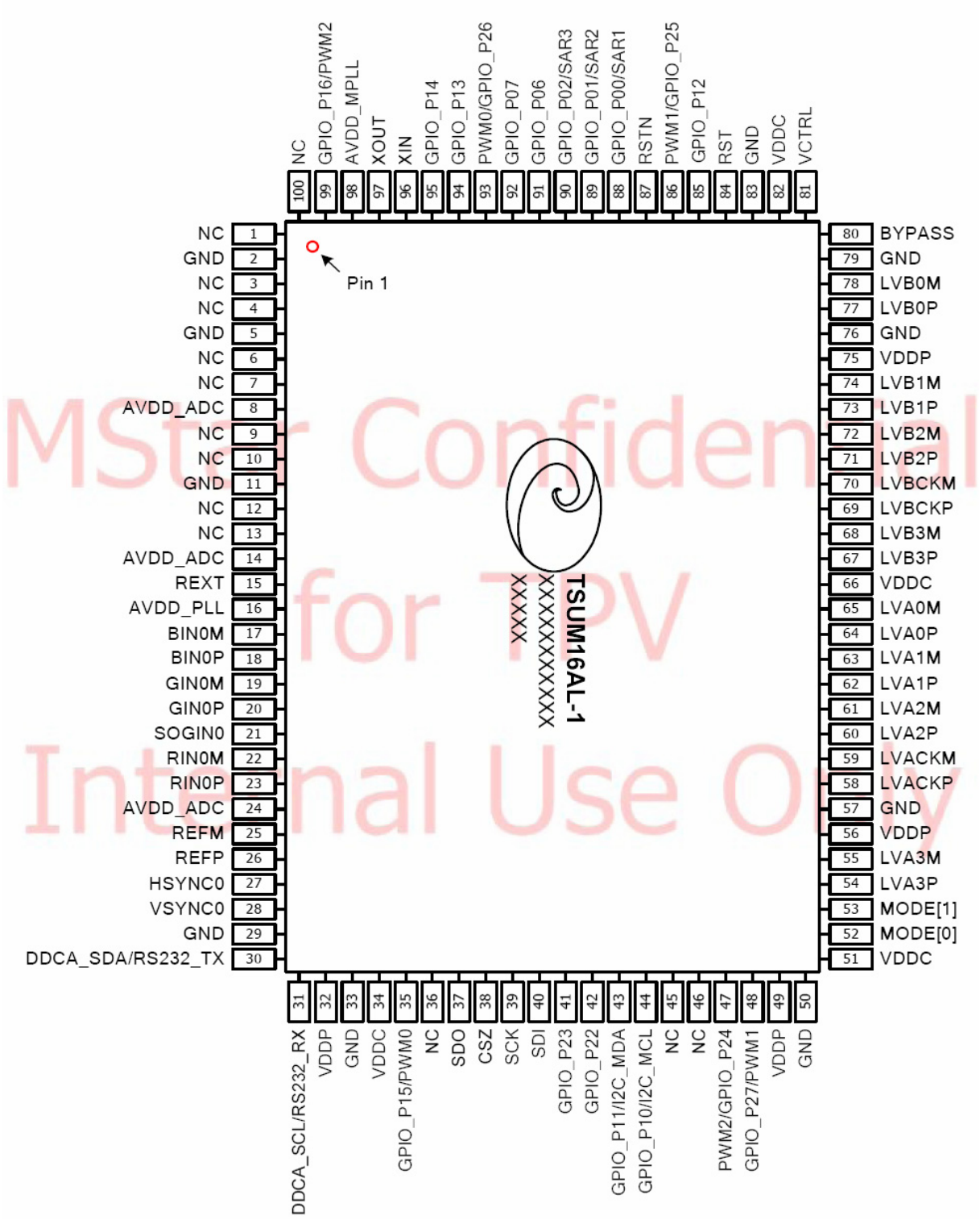
PWPC board combines to adapter and inverter, Adapter which commonly consists of bridge rectifier and filter, start circuit, PWM control circuit, protection circuits and convert to 12V, 5V DC voltage by input 90V-240V AC voltage that provide power supply for each chips in the main board and inverter. Inverter is DC TO AC circuit. It changes the 12v DC of power supply to about 600-800v AC that drives the backlight. It mostly consists of starting circuit, PWM controller, DC changing circuit, LC surging circuit, output circuit and protection circuit etc.



4.4 INTRODUCTION OF IC

TSUM16AL-1(U401): integrate ADC, OSD, SCALER, MCU, LVDS, convert analog RGB into digital and room and shrink scaling output to LCD panel.

Pin Diagram:



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PIN Function:

Pin	Symbol	Description
37	SDO	SPI flash serial data output
38	CSZ	SPI flash chip select
39	SCK	SPI flash serial select
40	SDI	SPI flash serial data input
30	DDCA_SDA/RS232_TX	DDC data for analog interface; 4mA driving strength/UART transmitter/GPIO
31	DDCA_SDA/RS232_RX	DDC data for analog interface/UART transmitter/GPIO
84	RST	Chip reset; High reset
87	RSTN	Chip reset; Low reset
81	VCTRL	Regulator control
27	HSYNCO	Analog HSYNC input
28	VSYNCO	Analog VSYNC input
26	REFP	Internal ADC top de-coupling pin
25	REFM	Internal ADC bottom de-coupling pin
15	REXT	External resistor 390 ohm to AVDD__ADC
86	PWM1/GPIO_P25	Pulse Width Modulation Output; 4mA driving strength/General Purpose Input/Output; 4mA driving strength
93	PWM0	Pulse Width Modulation Output; 4mA driving strength/General Purpose Input/Output; 4mA driving strength
80	BYPASS	For External Bypass Capacitor
96	XIN	Xin; Crystal Oscillator Input
97	XOUT	Xout; Crystal Oscillator Output
8、14、24	AVDD__ADC	ADC Power 3.3V
16	AVDD__PLL	PLL Power 3.3V
98	AVDD__MPLL	MPLL Power 3.3V
32、49、56、75	VDDP	Digital Output Power 3.3V
34、51、66、82	VDDC	Digital Core Power 1.8V

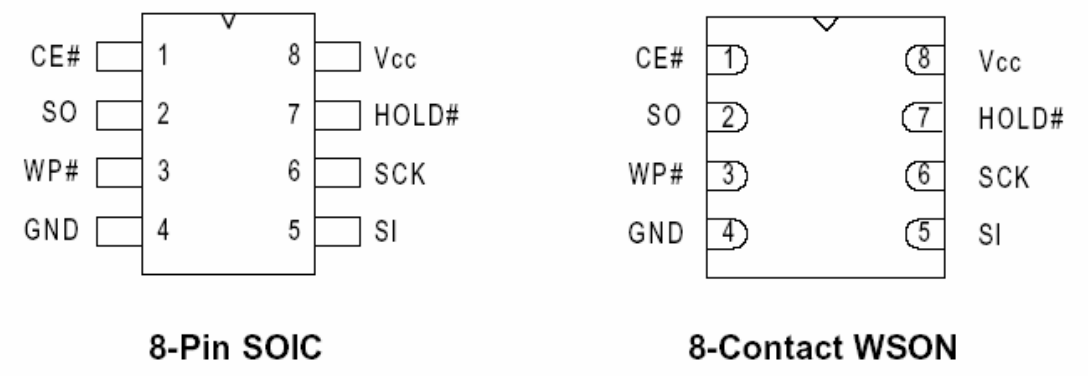
AP1117E33LA (U701): DC power convert, used to 5v convert 3.3v.

AP1117E18LA(U702): DC power convert, used to 5v convert 1.8v.

Pm25LV512A/010A/020/040(U402): The PM25LV010 are 512 Kbit/1 Mbits/2 Mbit/4 Mbit3.0 Volt-only Serial Peripheral Interface(SPI) Flash memories. The devices are designed to support 33MHz fastest clock rate in the industry in normal read mode, 100MHz in fast read mode and the bottom 4Kbyte sector into four smaller 1 Kbyte sectors features(except Pm25LV512A), The devices use a single low voltage, ranging from 2.7 Volt to 3.6 Volt, power supper to perform read, erase

and program operations. The devices can be programmed in standard EPROM programmers as well.

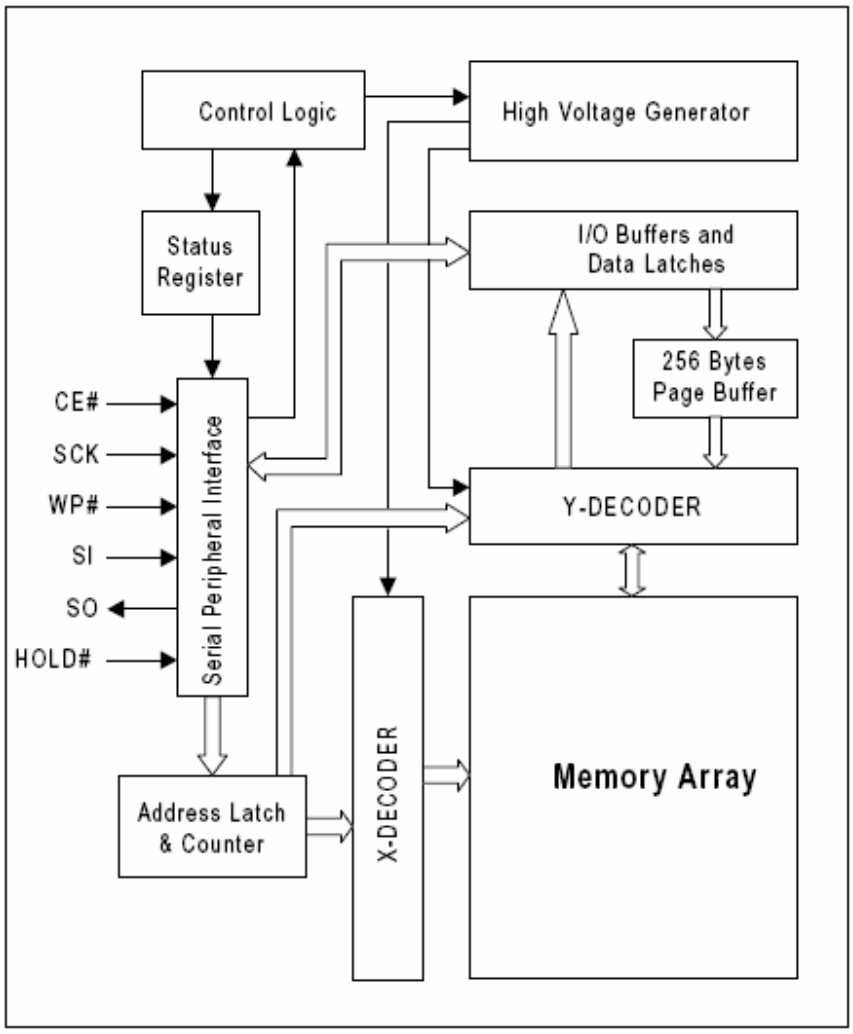
Pin Diagram:



PIN Descriptions:

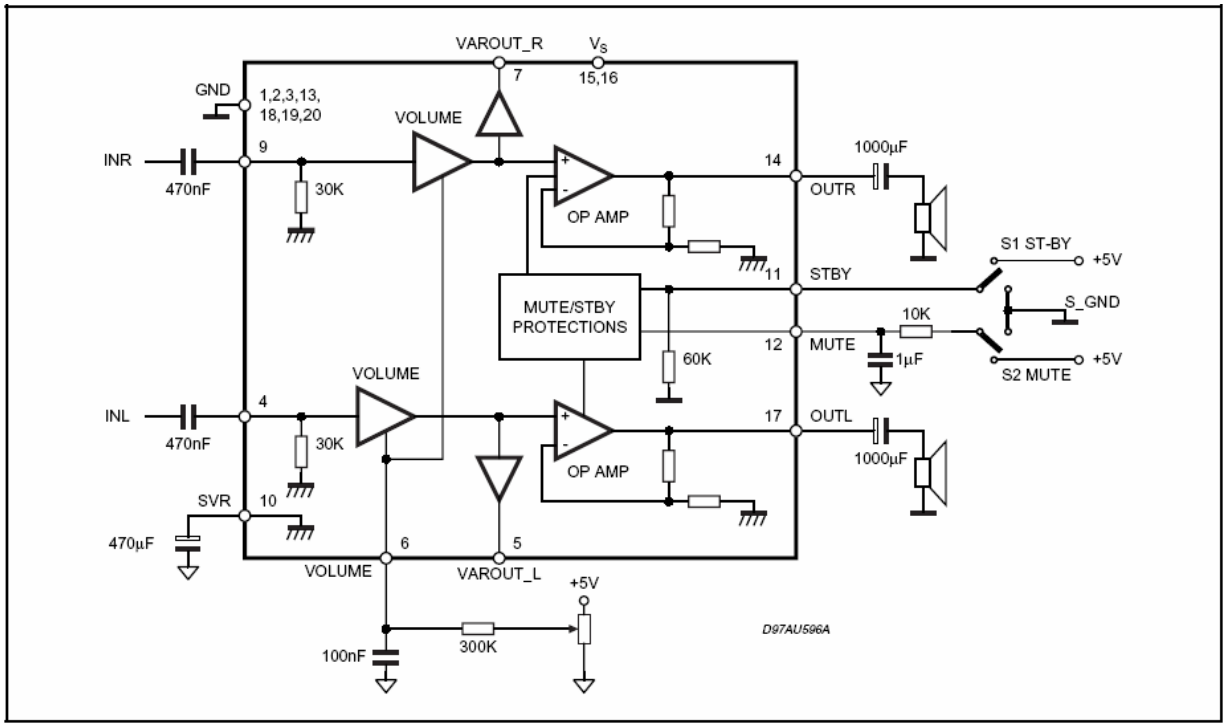
Symbol	Type	Description
CE#	INPUT	Chip Enable: CE# goes low activates the device's internal circuitries for device operation. CE# goes high deselects the device and switches into standby mode to reduce the power consumption. When the device is not selected, data will not be accepted via the serial input pin (SI), and the serial output pin (SO) will remain in a high impedance state.
SO	OUTPUT	Serial Data Output
WP#	INPUT	Write Protect A hardware program/erase protection for all or partial of memory array. When the WP# pin is pulled t low, whole or partial of memory array is write protected depends on the setting of BP2, BP1 and BP0 bits in the Status Register, When the WP# is pulled high, the devices are not write protected.
GND		Ground
Vcc		Device Power Supply
HOLD#	INPUT	Hold: Pause serial communication with the master device without resetting the serial sequence.
SCK	INPUT	Serial Data Clock
SI	INPUT	Serial Data Input

Circuit Diagram

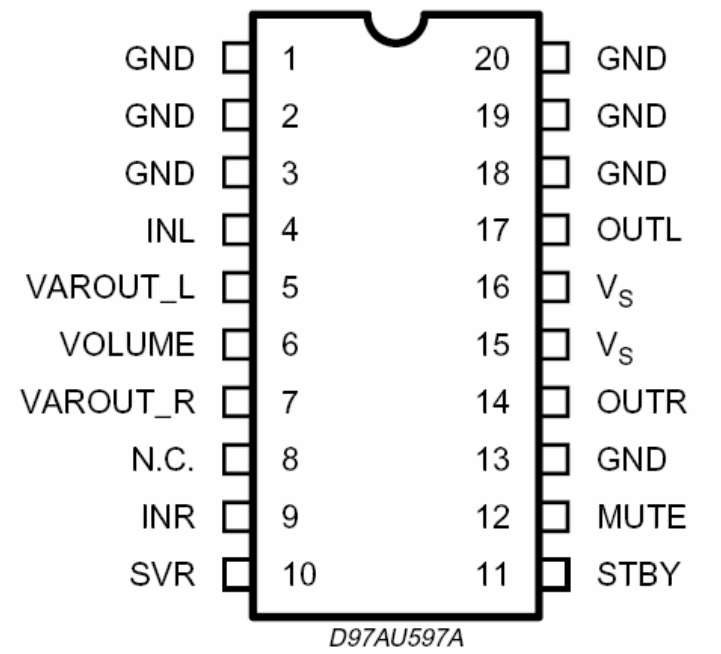


TDA7496L(U201): The TDA7496L is a stereo 2W+2W class AB power amplifier, specially designed for high quality sound, TV and Monitor applications. Features of the UTC TDA7496L include linear volume control, Stand-by and mute functions. The function of each pin and the inside circuit diagram are as follows**:**

Block Diagram



PIN Function

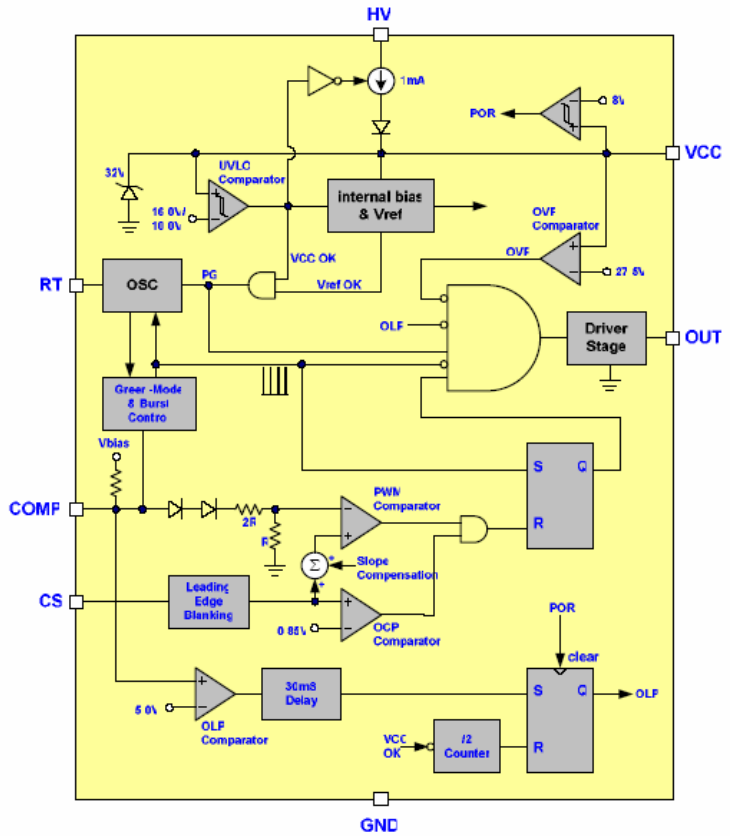


LD7575 PS (IC901): The LD7575 is a current-mode PWM controller with excellent power-saving operation. The embedded over voltage protection, over load protection and the special green-mode control provide the solution for users to design a high performance power circuit easily and etc. The function of each pin and the inside circuit diagram are as follows:

PIN Descriptions:

Pin	Name	Function
1	RT	This pin is to program the switching frequency. By connection a resistor to ground to set the switching frequency.
2	COMP	Voltage feedback pin(same as the COMP pin in UC384X), By connecting a photo-coupler to close the control loop and achieve the regulation.
3	CS	Current sense pin, connect to sense the MOSFET current
4	GND	Ground
5	OUT	Gate drive output to drive the external MOSFET
6	VCC	Supply voltage pin
7	NC	Unconnected Pin
8	HV	Connect this pin to positive of bulk capacitor to provide the startup current for the controller, when Vcc voltage trips the UVLO(on), this HV loop will be off to save the power loss on the startup circuit.

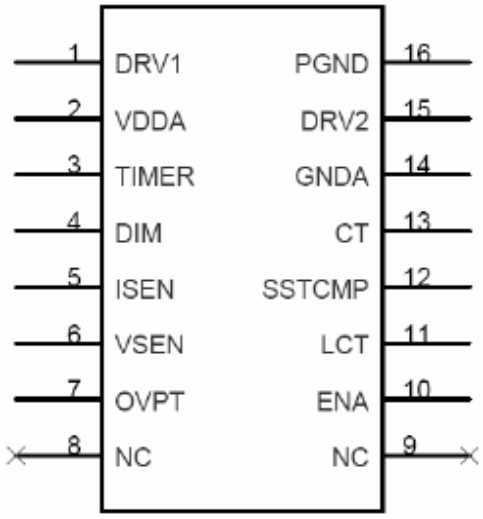
Block Diagram



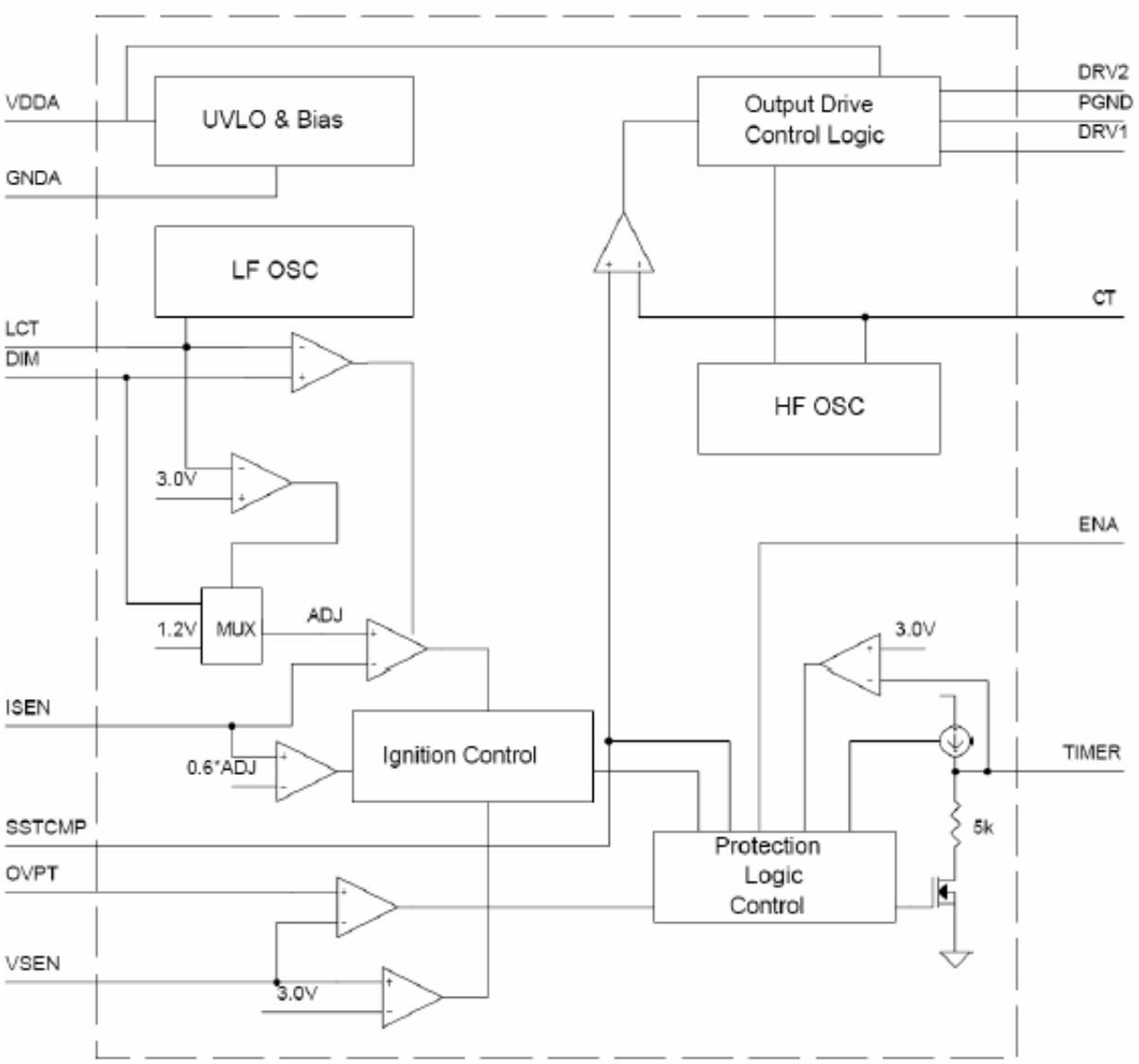
OZ9938GN(IC801): The OZ9938 is high performance, cost-effective CCFL controller designed for driving large-size LCD applications requiring 2 to 6 CCFLs.PWM control, Has such functions as short-voltage protection, Over-voltage protection, over-current protection and etc. The function of each pin and the circuit diagram inside are as follows:

PIN Descriptions:

Pin	Names	Description
1	DRV1	Drive output
2	VDDA	Supply voltage input
3	TIMER	Timing capacitor to set striking time and shutdown delay time
4	DIM	Analog dimming or Internal LPWM dimming or external PWM pulse input for dimming function
5	ISEN	Current sense feedback
6	VSEN	Voltage sense feedback
7	OVPT	Over-voltage/ over-current protection threshold setting pin
8	NC	No connection
9	NC	No connection
10	ENA	ON/OFF control of IC
11	LCT	Timing capacitor to set internal PWM dimming frequency and also a pin for analog dimming selection
12	SSECMP	Capacitor for soft start time and loop compensation
13	CT	Timing resistor and capacitor for operation and striking frequency
14	GNDA	Ground for analog signals
15	DRV2	Drive output
16	PGND	Ground for power paths



Block Diagram



5. Adjustment Procedure

5.1 ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.
3. ESD protection is needed before adjustment.

5.2 MAIN ADJUSTMENTS

NO.	FUNCTIONS	DESIGNATION
1.	White Balance	Function Key
2.	Geometry	Function Key

5.3 ALIGNMENT PROCEDURES

Approximately 30 minutes should be allowed for warm up before proceeding White-Balance adjustment.

1. Adjust of White Balance

1.)How to do the Chroma-7120 MEM .Channel setting

A、Reference to chroma 7120 user guide
B、Use " **SC**" key and " **NEXT**" key to modify xyY value and use "**ID**" key to modify the TEXT description Following is the procedure to do white-balance adjust

2.)Setting the color temp. You want

A、MEM.CHANNEL9 (9300 color):
9300 color temp. parameter is Wx = 0.283 ±0.03;Wy = 0.298 ±0.03;
Y = 250 ±20 cd/m^2 ,
B、MEM.CHANNEL10 (6500 color):
6500 color temp. parameter is Wx = 0.313±0.03;Wy = 0.329 ±0.03;
Y = 260 ±20 cd/m^2,
C、MEM.CHANNEL 11 (5400 color):
5400 color temp. parameter is Wx = 0.335±0.03;Wy = 0.350 ±0.03;
Y = 250 ±20 cd/m^2,
D、MEM.CHANNEL10 (SRGB color):
6500 color temp. parameter is Wx = 0.313±0.03;Wy = 0.329 ±0.03;
Y = 220 ±20 cd/m^2,

3.)Into factory mode of VA1903wb/VA1903wm

A、First Power off, then press Switch 2 button along with press Power button will activate the factory mode, then MCU will do AUTO LEVEL automatically. Meanwhile press MENU the OSD screen will located at **LEFT TOP OF PANEL**.

4.)Bias adjustment :

Set the **Contrast** to 70

Adjust the **Brightness** to 100.

5.)Gain adjustment :

Move cursor to "-F-" and press MENU key

A、Adjust 9300 color-temperature

(1)、Switch the Chroma-7120 to **RGB-Mode** (with press "MODE" button)
(2)、Switch the MEM. channel to Channel 9 (with up or down arrow on chroma 7120)
(3)、The LCD-indicator on chroma 7120 will show x = 0.283 ±0.03, y =0.298 ±0.03, Y = 250 ±20 cd/m^2
(4)、Adjust the RED of color1 on factory window until chroma 7120 indicator reached the value R=100
(5)、Adjust the GREEN of color1 on factory window until chroma 7120 indicator reached the value G=100
(6)、Adjust the BLUE of color1 on factory window until chroma 7120 indicator reached the value B=100
(7)、Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±5

B、Adjust 6500 color-temperature

(1)、Switch the chroma-7120 to **RGB-Mode** (with press "MODE" button)
(2)、Switch the MEM .channel to Channel 10(with up or down arrow on chroma 7120)
(3)、The LCD-indicator on chroma 7120 will show x = 0.313 ±0.03, y = 0.329 ±0.03, Y = 260 ±20 cd/m^2
(4)、Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100
(5)、Adjust the GREEN of color3 on factory window until chroma 7120 indicator reached the value G=100
(6)、Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
(7)、Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±5

C、Adjust 5400 color-temperature

(1) Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 11(with up or down arrow on chroma 7120)
(3)、The LCD-indicator on chroma 7120 will show x = 0.335 ±0.03, y = 0.350 ±0.03, Y = 250 ±20 cd/m^2
(4)、Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100
(5)、Adjust the GREEN of color3 on factory window until chroma 7120 indicator reached the value G=100
(6)、Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
(7)、Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±5

D、Adjust SRGB color-temperature

(1)、Switch the chroma-7120 to **RGB-Mode** (with press “MODE” button)
(2)、Switch the MEM .channel to Channel 10(with up or down arrow on chroma 7120)
(3)、The LCD-indicator on chroma 7120 will show x = 0.313 ±0.03, y = 0.329 ±0.03, Y = 220 ±20 cd/m^2
(4)、Adjust the RED of color3 on factory window until chroma 7120 indicator reached the value R=100
(5)、Adjust the GREEN of color3 on factory window until chroma 7120 indicator reached the value G=100
(6)、Adjust the BLUE of color3 on factory window until chroma 7120 indicator reached the value B=100
(7)、Repeat above procedure (item 4,5,6) until chroma 7120 RGB value meet the tolerance =100±5

E、Press reset key and Turn the Power-button “off to on” to quit from factory mode.

2. Geometry

1).Set cross-hatch pattern and preset timing as timing table listed.
2).Change to each mode in turn and wait for the monitor finish auto-alignment and save press before change to next mode.
3).Until all of modes are adjusted, exit OSD menu and press POWER OFF to exit factory mode.

5.4 Factory Defaults

Item	Defaults	Item	Defaults
Contrast	70%	Input Priority	N/A
Brightness	100%	Resolution Notice	On
Color Temperature	6500K	Volume	50% (for VA1903wm only)
Sharpness	100%	Balance	N/A
OSD H. Position	50%	Treble	N/A
OSD V. Position	50%	Bass	N/A
OSD Time Out	15	720x400 / 640x400	720x400
OSD Background	On		

5.5 Function Test

1 Product: 19” LCD Monitor

2 Test Equipment: Color Video Signal & Pattern (or PC with SXGA resolution and a sound card)

3 Test Condition: Before function test and alignment, each LCD Monitor should be warmed up for at least 30 minutes with the following conditions:
(a)In room temperature,
(b) With full-white screen, RGB, and Black
(c) With cycled display modes,
640*480 (H=43.27kHz, V=75Hz)
800*600 (H=53.7kHz, V=75Hz)
1024*768 (H=68.67kHz, V=75Hz)
1280*1024 (H=79.97kHz, V=75Hz)
1440*900 (H=70.6kHz, V=75Hz)

4 Test Display Modes & Pattern

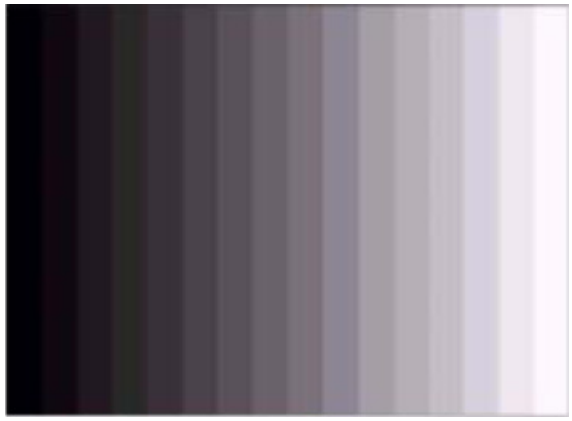
Compatible Modes

Item	Timing	Analog
1	640 x 480 @ 60Hz, 31.5kHz	**Yes**
2	640 x 480 @ 75Hz, 31.5kHz	**Yes**
3	720 x 400 @ 70Hz, 31.5kHz	**Yes**
4	800 x 600 @ 56Hz, 35.1kHz	**Yes**
5	800 x 600 @ 60Hz, 37.9kHz	**Yes**
6	800 x 600 @ 72Hz, 48.1kHz	**Yes**
7	800 x 600 @ 75Hz, 46.9kHz	**Yes**
8	1024 x 768 @ 60Hz, 48.4kHz	**Yes**
9	1024 x 768 @ 70Hz, 56.5kHz	**Yes**
10	1024 x 768 @ 72Hz, 58.1kHz	**Yes**
11	1024 x 768 @ 75Hz, 60.0kHz	**Yes**
12	1280 x 1024 @ 60Hz, 48.4kHz	**Yes**
13	1280 x 1024 @ 75Hz, 60.0kHz	**Yes**
14	1440 x 900 @ 60Hz, 55.9kHz	**Yes**
15	1440 x 900 @ 75Hz, 70.6kHz	**Yes**

Function Test Display Pattern

Item	Test Content	Pattern	Specification	Remark
1	Frequency & Tracking	Fine Line Moire	Eliminate visual wavy noise.	Figure 1
2	Contrast/Brightness	16 Gray Scale	16 gray levels sh should be distinguishable.	Figure 2
3	Boundary	Horizontal&Vertical Thickness	Horizontal and Vertical position of video should be adjustable to be within the screen frame.	Figure 3
4	RGB Color Performance	RGB Color Intensities	Contrast of each R, G, B, color should be normal.	Figure 4,5,6
5	Screen Uniformity & Flicker	Full White	Should be compliant with the spec.	Figure 7
6	Dead Pixel/Line	White Screen & Dark Screen	The numbers of dead pixels should be compliant with the spec.	Figure 7,8
7	White Balance	White & Black Pattern	The screen must have the pure white and black pattern, no other color.	Figure 9

Fine Line Morie Pattern (Figure1)



Gray Scale Pattern (Figure2)

Horizontal & Vertical Thickness Pattern (Figure 3)

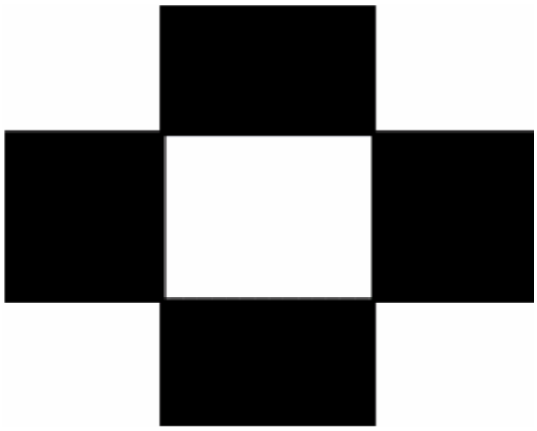
R. Color Pattern (Figure 4)

G. Color Pattern (Figure 5)

B. Color Pattern (Figure 6)

Full White Pattern (Figure 7)

Dark Screen Pattern (Figure 8)



Black-White Pattern (Figure 9)

4.3 Function Test and Alignment Procedure

All Modes Reset

You should do “All Mode Reset” (Refer to Chapter III-3. Hot Keys for Function Controls) first. This action will allow you to erase all end-user’s settings and restore the factory defaults.

Auto Image Adjust

Please select and enter “Auto Image Adjust” function on Main Menu to see if it is workable. The “Auto Image Adjust” function is aimed to offer a better screen quality by built-in ASIC. For optimum screen quality, the user has to adjust each function manually.

Firmware

Test Pattern: Burn In Mode (Refer to Chapter III-3. Hot Keys for Function Controls)

- Make sure the F/W is the latest version.

DDC

Test Pattern: EDID program

Make sure it can pass test program.

Fine Tune and Sharpness

Test Signal: 1440*900@60Hz

Test Pattern: Line Moire Pattern

Check and see if the image has noise and focus performs well. Eliminate visual line bar.

If not, readjust by the following steps:

(a)Select and enter “Fine Tune” function on “Manual Image Adjust” to adjust the image to eliminate visual wavy noise.

(b)Then, select and enter “Sharpness” function to adjust the clarity and focus of the screen image.

Boundary

Test Signal: 1440*900@60Hz

Test Pattern: Horizontal & Vertical Line Thickness Pattern

Check and see if the image boundary is within the screen frame.

If not, readjust by the following steps:

(a)Select and enter “Manual Image Adjust” function on OSD Main Menu.

(b)Then, select and enter “Horizontal Size” or “Horizontal/Vertical Position” function to adjust the video boundary to be full scanned and within screen frame.

White Balance

Test Signal: 1440*900@60Hz

Test Pattern: White and Black Pattern

1.5.8 R, G, B, Colors Contrast

Test Signal: 1440*900@60Hz

Test Pattern: R, G, B, Color Intensities Pattern and 16 Gray Scale Pattern

- Check and see if each color is normal and distinguishable.
- If not, please return the unit to repair area.

Screen Uniformity and Flicker

Test Signal: 1440*900@60Hz

Test Pattern: Full White Pattern

- Check and see if it is in normal condition.

1.5.10 Dead Pixel and Line

Test Signal: 1440*900@60Hz

Test Pattern: Dark and White Screen Pattern

- Check and see if there are dead pixels on LCD panel with shadow gauge and filter film.
- The total numbers and distance of dead pixels should be compliant with the spec.

Mura

Test Pattern: White, RGB, Black, & Grey

Test Tool: 10% ND Filter

- Check if the Mura can pass 10% ND Filter.

Audio

Test Signal: Voice signal (optional, depend on model)

Test Pattern: liberty

- Make sure there is audio output.
- Make sure that audio function (volume 80%) is working without noise and resonance.
- Make sure that the sound of right and left speakers are in balance.

Check for Secondary Display Modes

Test Signal:

Analog: 640*480@60/75Hz;
720*400@70Hz; 800*600@56/60/72/75Hz;
1024*768@60/70/72/75Hz; 1280*1024@60/75Hz
1440*900@60/75Hz

- Normally when the primary mode 1440*900@60Hz is well adjusted and compliant with the specification, the secondary display modes will also be compliant with the spec. But we still have to check with the general test pattern to make sure every secondary is compliant with the specification.

All Modes Reset

After final QC step, we have to erase all saved changes again and restore the factory defaults. You should do “All Mode Reset” again.

Power Off Monitor

Turn off the monitor by pressing “Power” button.

5.6 Firmware Upgrade Procedure

When you receive the returned monitor, please check whether the firmware version is

the latest. If not, please do the following procedures to upgrade it to the latest version.

1 Equipment Needed

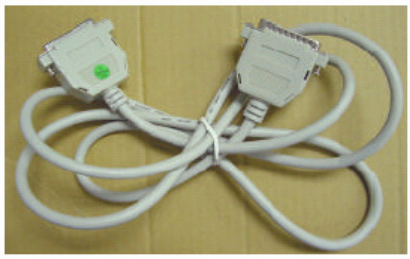
- VA1703W/VA1903W Monitor
- Fixture for Firmware Upgrade
- Power Adapter (P/N: 47.58201.001) *1 for Fixture
- VGA Cable (P/N: 42.59901.003) *1(Pin 4, 11 should be connected to GND)
- PC (Personal Computer)
- LPT Cable (P/N: 42.59906.001) *1
- Firmware Upgrade Program
- One additional monitor for checking the program execution

PC

Fixture

VA1703W/VA1903W

Power Adapter for Fixture
(P/N: 47.58201.001)

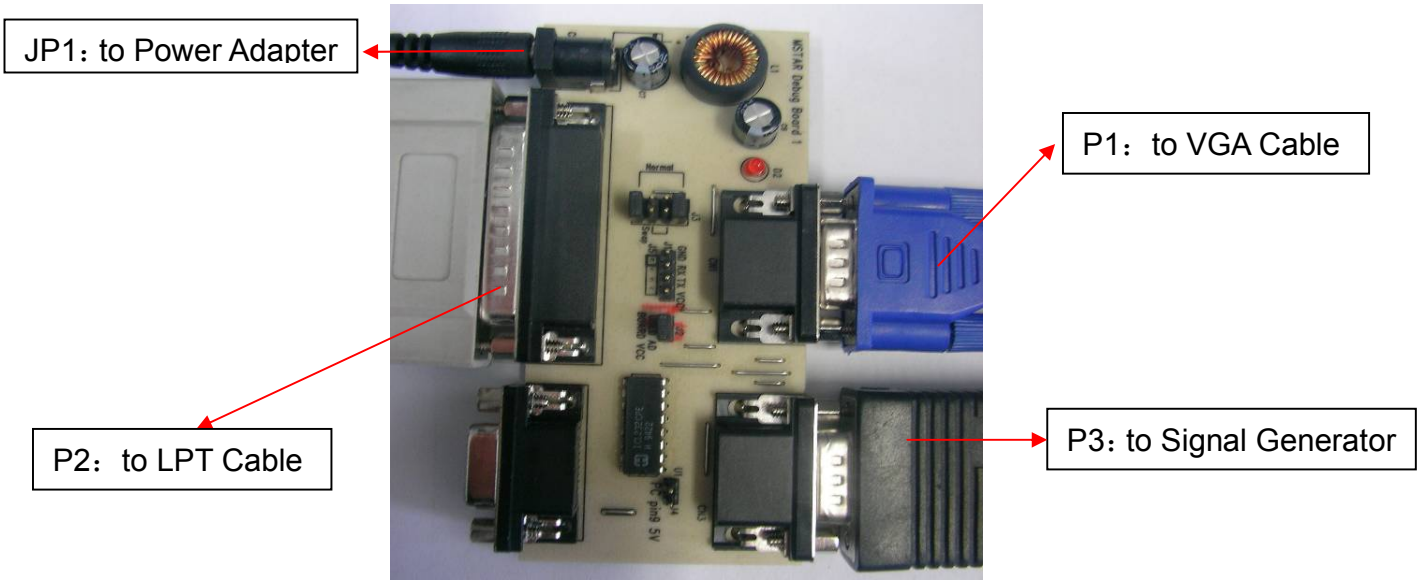


LPT Cable
(P/N: 42.59906.001)

VGA Cable
(P/N: 42.59901.003)

2 Setup Procedure

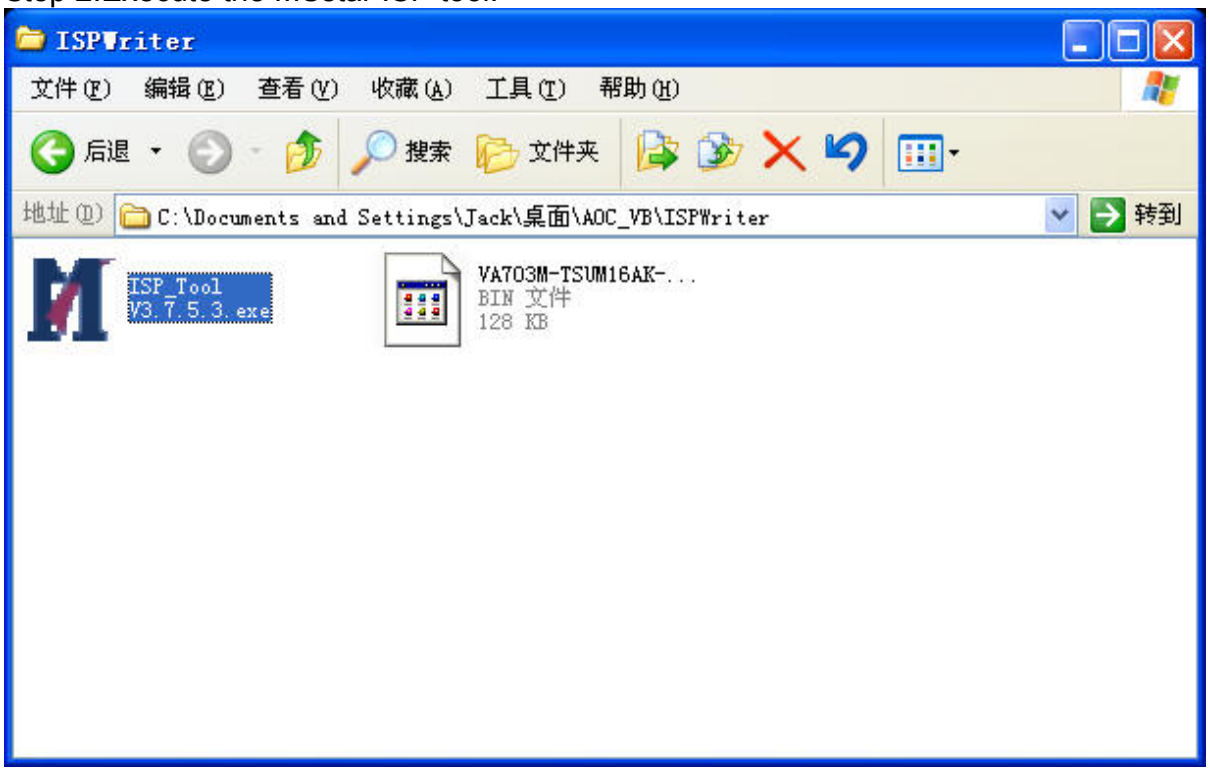
2.1 Connect P2 of Fixture with printer port of PC by LPT Cable.
2.2 Connect P1 of Fixture with VA1703W/VA1903W Monitor by VGA Cable.
2.3 Plug Power Adapter to Fixture.
2.4 Connect Power Cord to VA1703W/VA1903W Monitor.
2.5 Connect P3 to the Signal Generator (eg.Chroma2326) for verifying it after the operation being completed.
2.6 Connect PC to the additional monitor.



3 Firmware Upgrade Procedure

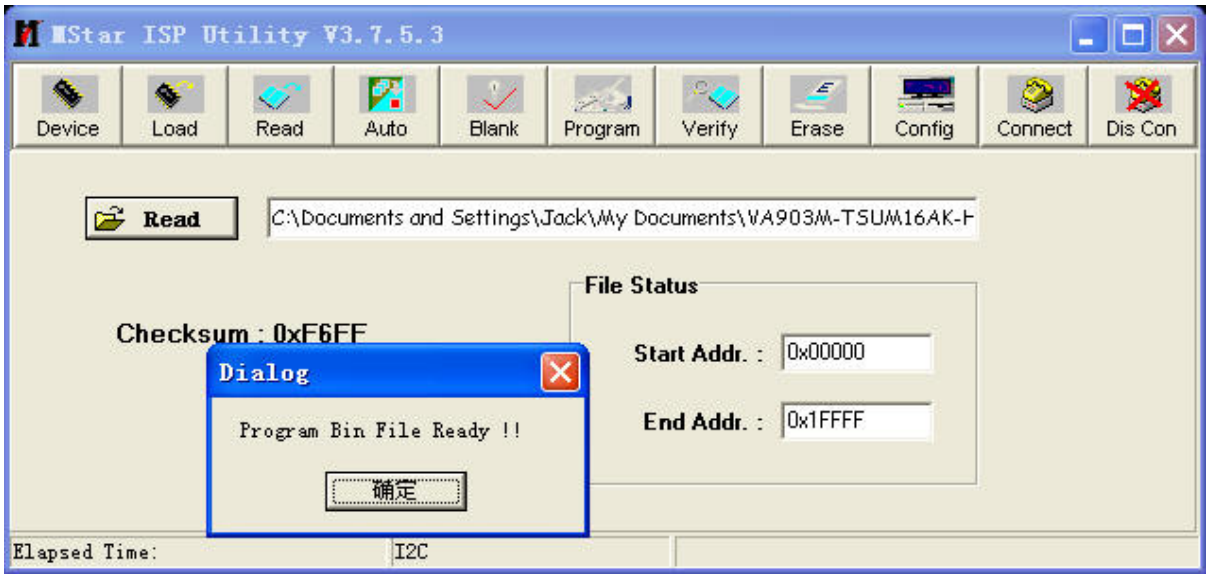
Step 1. Let VA1703W/VA1903W set to be connected with AC cable and VGA cable.

Step 2.Execute the MSstar ISP tool.

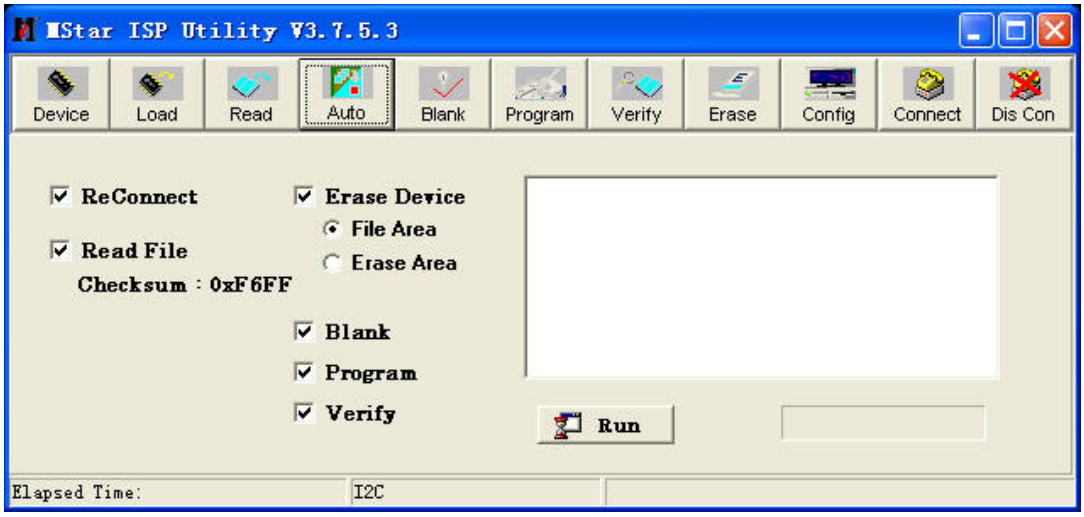


Step 3. Click “Connect” button . (On this step, if the connection is successful, the “Device Type is ******(Flash Type)” Dialog will be showed. If not, the error dialog will be done.)

Step 4. Click “Read” button. Select the object bincode on your corresponding directory.



Step 5. Click “Auto” button. Be sure that function of Erase Device (File Area), Blank, Program and Verify is selected, then execute the flashing action by clicking the “Run” button.



Step 6. If the flashing F/W has been completed, “Verify Ok” message will be shown on the right TextBox.

Step 7. Unplug and replug power cord of VA1703W/VA1903W set and then check the OSD operation and image on srceen.

Step 8. At last, do “Memory Recall.”

3.2 Setup Procedure

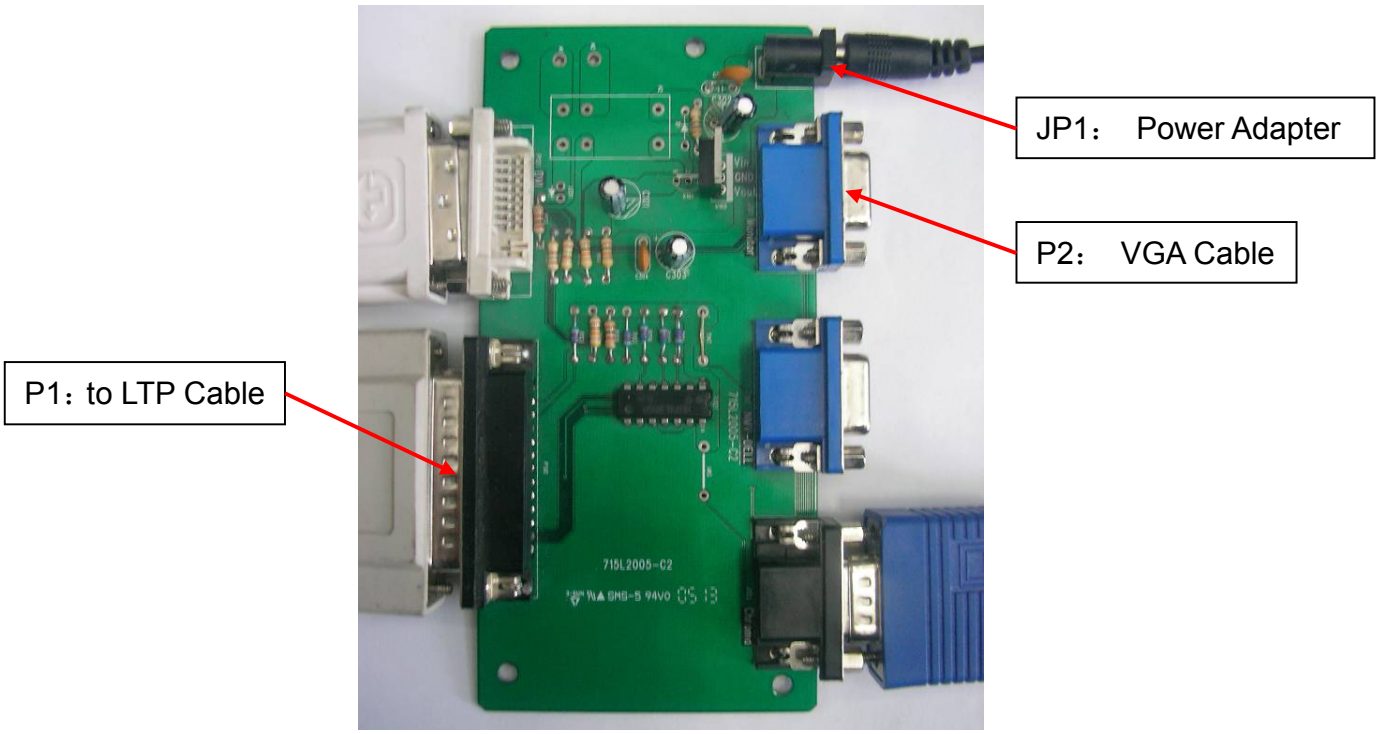
3.2.1 Connect P2 and monitor of Fixture with VGA ports of VA1703W/VA1903W by VGA Cable.

3.2.2 Connect P1 of Fixture with Printer port of PC by LPT Cable.

3.2.3 Plug Power Adapter to Fixture.

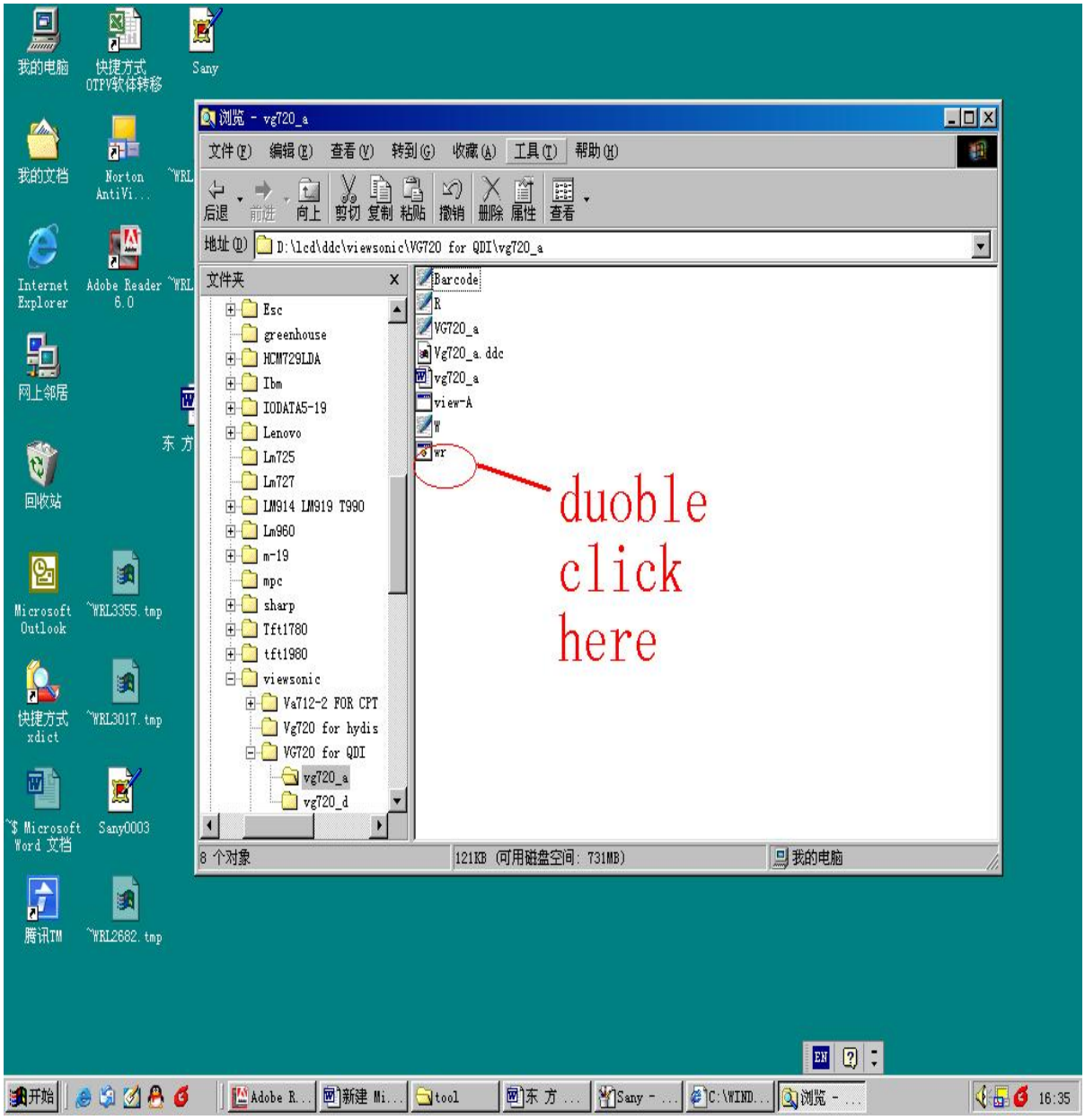
3.2.4 Connect Power Cord to VA1703W/VA1903W Monitor.

3.2.5 Connect PC to the additional monitor.

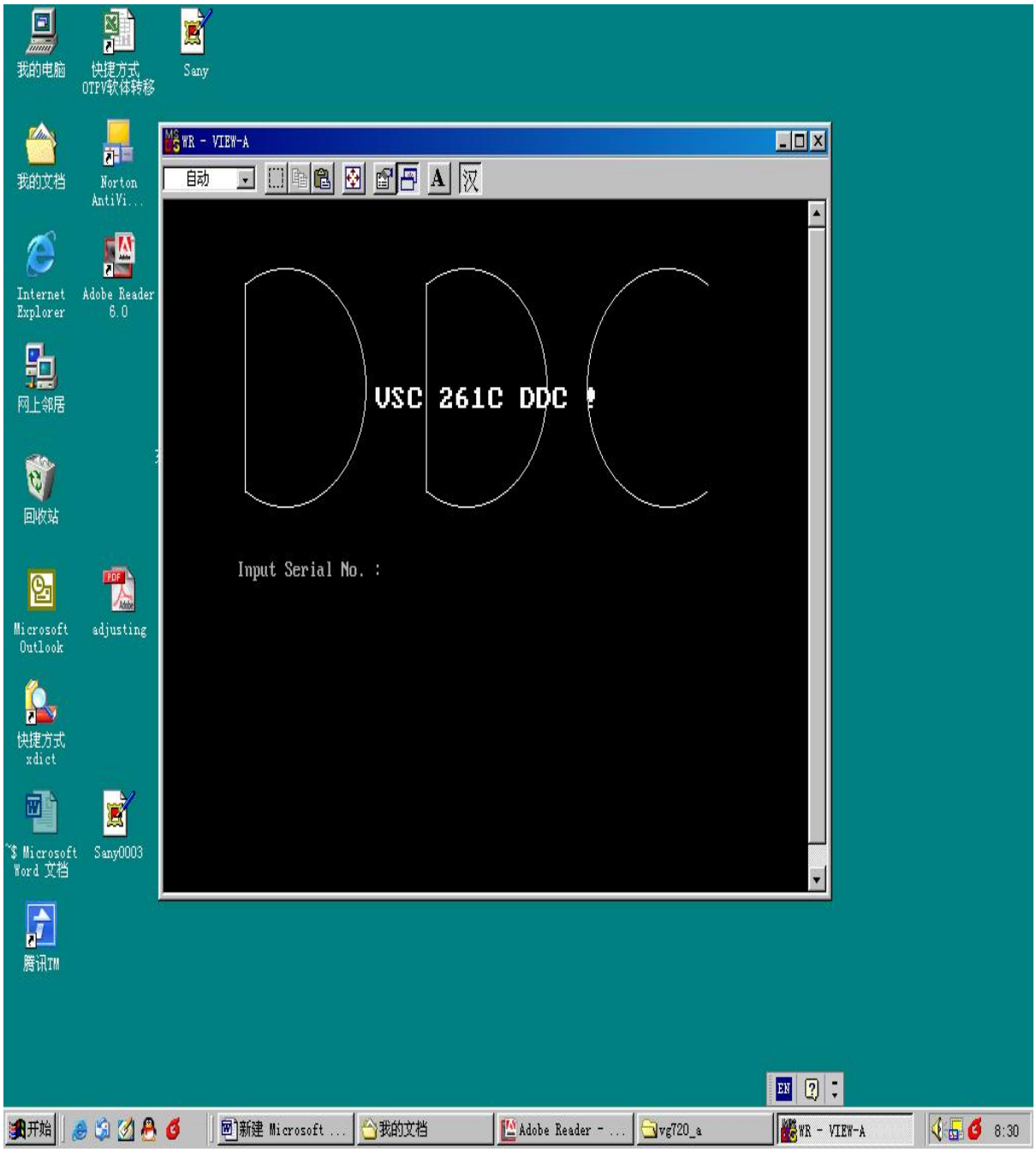


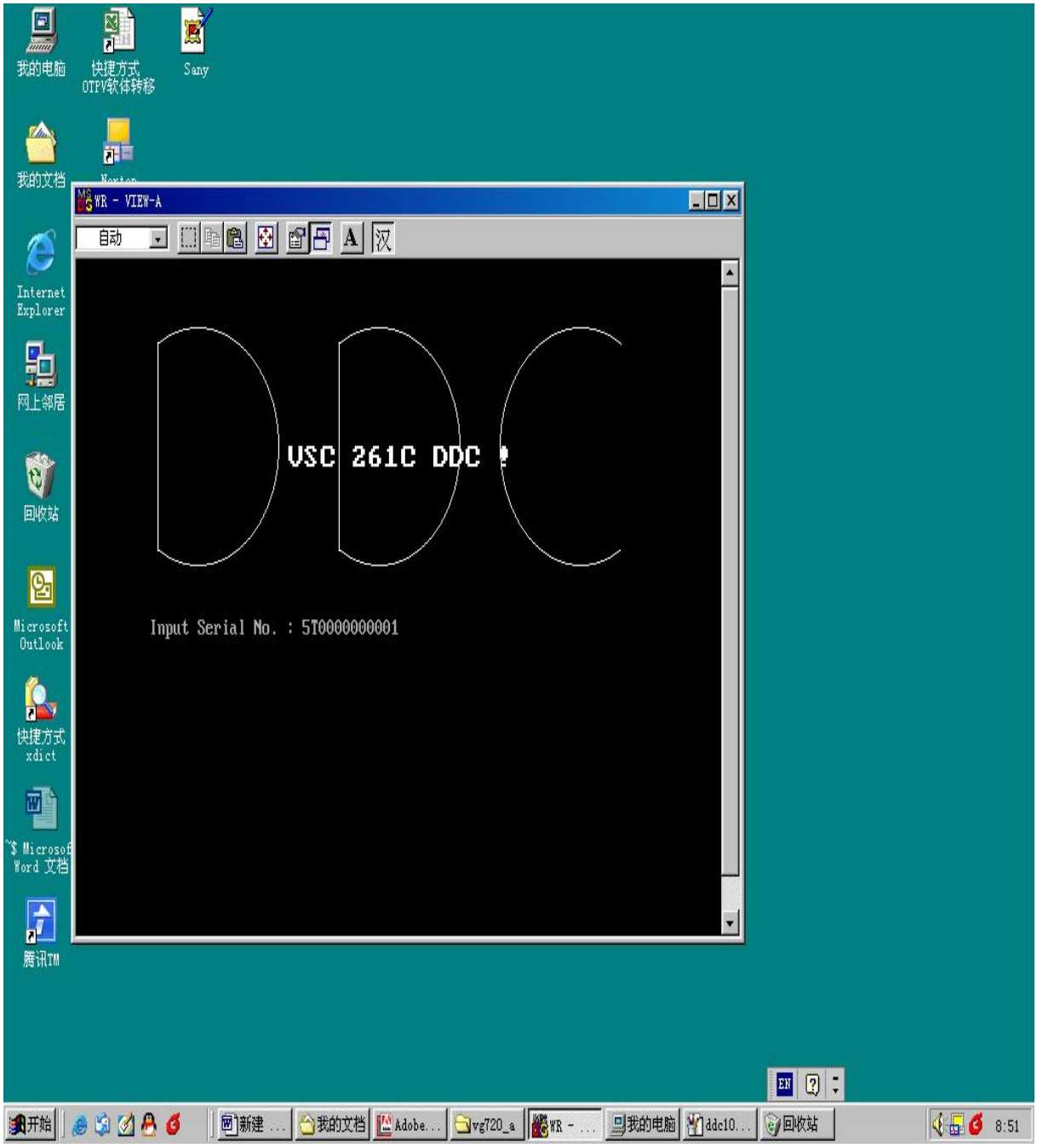
3.3 DDC Key In Procedure

Sep1.Select and execute DDC Key In program

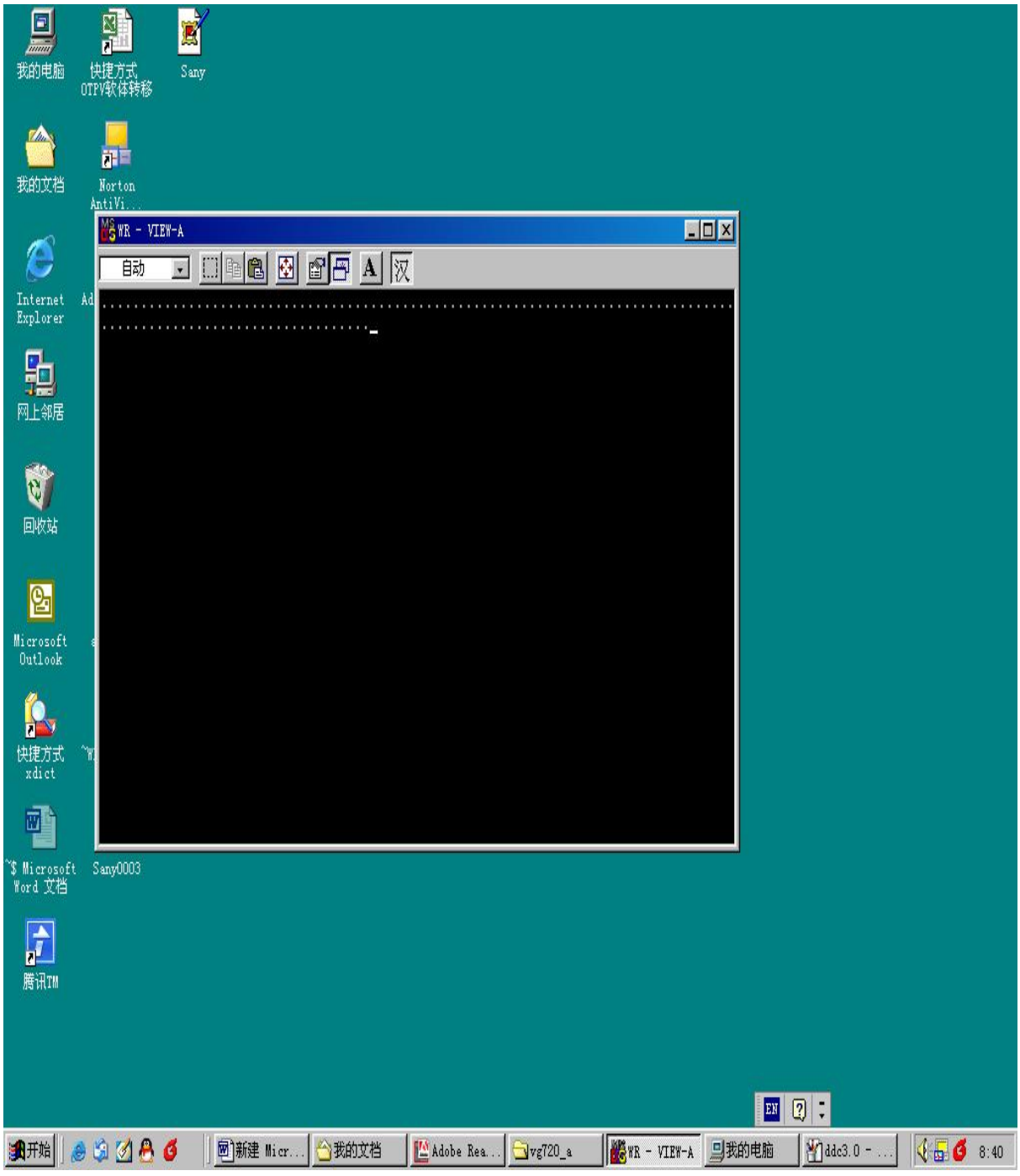

duoble
click
here

Sep2:Inpute the S/N and execute “Enter”

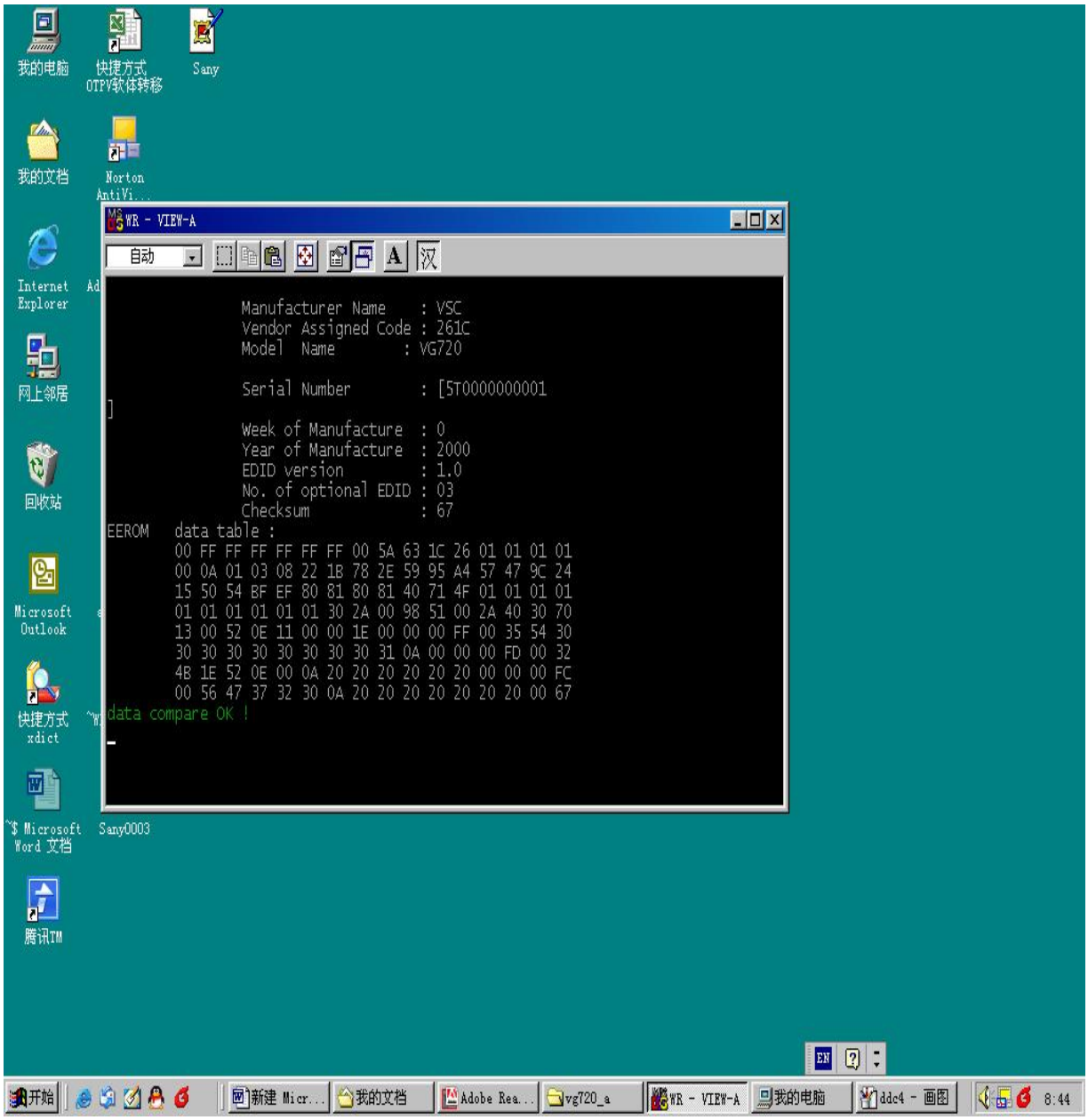



我的电脑
快捷方式 OTPV软体转移
Sany
我的文档
Internet Explorer
网上邻居
回收站
Microsoft Outlook
快捷方式 xdict
腾讯TM
WR - VIEW-A
自动
VSC 261C DDC
Input Serial No. : 5T0000000001
开始
新建 ...
我的文档
Adobe...
vg720_a
WR - ...
我的电脑
ddc10...
回收站
8:51

Sep3:Key the “Enter” and write the data

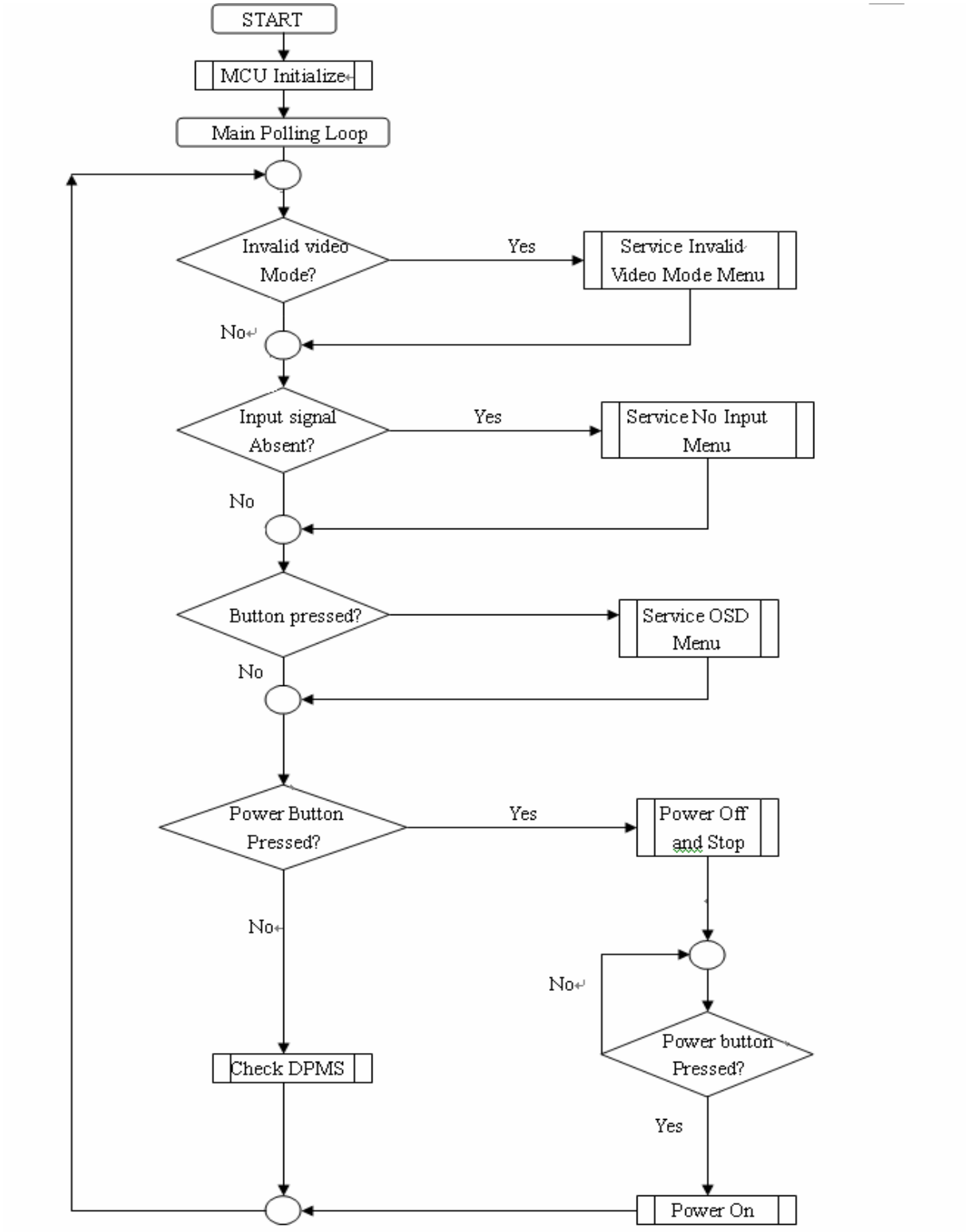


Sep4:If ddc program OK and show “data compare ok”


WR - VIEW-A
自动
Manufacturer Name : VSC
Vendor Assigned Code : 261C
Model Name : VG720
Serial Number : [5T0000000001
]
Week of Manufacture : 0
Year of Manufacture : 2000
EDID version : 1.0
No. of optional EDID : 03
Checksum : 67
EEROM data table :
00 FF FF FF FF FF FF 00 5A 63 1C 26 01 01 01 01
00 0A 01 03 08 22 1B 78 2E 59 95 A4 57 47 9C 24
15 50 54 BF EF 80 81 80 81 40 71 4F 01 01 01 01
01 01 01 01 01 01 30 2A 00 98 51 00 2A 40 30 70
13 00 52 0E 11 00 00 1E 00 00 00 FF 00 35 54 30
30 30 30 30 30 30 30 30 31 0A 00 00 00 FD 00 32
4B 1E 52 0E 00 0A 20 20 20 20 20 20 00 00 00 FC
00 56 47 37 32 30 0A 20 20 20 20 20 20 20 00 67
data compare OK !
我的电脑
快捷方式 OTPV软体转移
Sany
我的文档
Norton AntiVi...
Internet Explorer
网上邻居
回收站
Microsoft Outlook
快捷方式 xdict
~$ Microsoft Word 文档
Sany0003
腾讯TM
开始
新建 Micr...
我的文档
Adobe Rea...
vg720_a
WR - VIEW-A
我的电脑
ddc4 - 画图
8:44

5.7 Packing Procedure

6. Troubleshooting Flow Chart



7. Recommended Spare Part List

VA1903m BOM list——T96HM9DB1WVSAJ

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1		AUPC6AA2	AUPC BOARD			1
2		CBPC6HM9VSA1	G2467-B-X-X-1-20061121			1
3		KEPC6AAF	KEPC BOARD			1
4		PWPC942HV1J	G1899-1A-VS-X-3-061214			1
5		15G5990 1	KENSINGTON BRACKET			1
6		23G3178709 3A	VSC17-LCD FRONT LOGO			1
7		23G3178709 4A	VSC17-LCD FRONT LOGO			1
8		40G 45760819A	MODEL LABEL			1
9		40G 459709 1B	CARTON LABEL			1
10		40G 459709 4A	H/V WARNING LABEL			1
11		40G 459709 5A	HI-POT LABEL FOR 17-LCD			1
12		40G 58162435A	MANUAL P/N LABEL			1
13		40G581B709 4A	S/N LABEL			2
14		45G 77 3	TRANSPARENT SHEET			173
15		52G 1185 24	TAPE			65
16		52G 1207 A	AL Foil Adhesive tape			1
17		52G 1211527	AL Foil Adhesive tape			2
18		52G 2191 D	Adhesive tape			75
19		52G6020 17	PROTECT FILM			1
20		78G 455 4 YL	SPAKER, 115+-5MM			1
21		78G 455 4 YR	SPAKER, 130+-5MM			1
22		89G 17356D 52	AUDIO CABLE			1
23		89G 728HAA902	SIGNAL CABLE			1
24		89G404A18N LS	POWER CORD			1
25		95G8014 12 73	HARNESS 12P-12P 170MM			1
26		95G8018 30142	HARNESS 30P-24P 200MM			1
27		M1G 130 5120	SCREW M3X5			4
28		M1G1140 6120	SCREW			1
29		M1G1730 6120	M3*6			4
30		M1G1730 6120	M3*6			2
31		M1G1730 6120	M3*6			2
32		M1G1740 8120	SCREW FOR STD/MF	XN01A		2
33		M1G2640 12 47 CR3	SCREW	XN01A		4
34		Q1G 330 8 47 CR3	SCREW			1
35		Q1G 330 8120	SCREW			4
36		Q1G1140 10120	SCREW	XN01A		2
37		Q1G1740 8120	Q4*8	XN01A		1

38		750GLH90GW132N000V	PANEL HSD190MGW1-A03 HSD			1
39		A34G0028 KR L	BASE			1
40		A34G0245AKD L	BEZEL			1
41		A34G0246 KR 1L	REAR COVER PSWG/W AUDIO			1
42		A34G0247 KR L	STAND			1
43		A34G0248 KR L	HINGE COVER			1
44		J12G 394800	FOOT			6
45		J12G 808 1	VESA RUBBER			4
46		J15G0188 2	MAIN FRAME HYDIS			1
47		J37G0090 1	HINGE			1
48		J40G190T709 6A	ID VA1903WM-T			1
49		J40GSTAR709 1A	EPA LABEL			1
50		J41G780170916A	INSERT CARD			1
51		J41G7802709 2A	QSG			1
52		J41G7802709 3A	ROHS INSET			1
53		J44G9012 1	EPS(L)			1
54		J44G9012 2	EPS(R)			1
55		J44G9012709 2B	CARTON			1
56		J45G 76 28V3A	PE BAG FOR MANUAL-CARD			1
57		J45G 88606 R	PE BAG FOR BASE			1
58		J45G 88609800 R	EPE COVER			1
59		J45G 88626 1 R	PE BAG FOR MONITOR			1
60		J50G 600 5	HANDLE 1			1
61		J50G 600 6	HANDLE 2			1
62		J52G 1185VSC	MIDDLE TAPE FOR CARTON			10
63		J70G1902709 2A	CD MANUAL			1
64		SMTAUPC6AA2	AUPCBOARD FOR SMT			1
65		33G802410C H	Wafer&Plug 10P	CN202		1
66		56G 616 31	IC TDA7496T 1.2W*2 DIP-2	U201		1
67		67G 305471 4	105℃RADIALE-CAPACTOR 47	C201		1
68		67G 305471 4	105℃RADIALE-CAPACTOR 47	C202		1
69		67G 305471 4	105℃RADIALE-CAPACTOR 47	C208		1
70		67G215L471 3N	470UF/16V	C205		1
71		67G215L471 3N	470UF/16V	C207		1
72		88G 30214K	PHONE JACK 5PIN	CN201		1
73		90G6093 1	HEAT SINK	U201		1
74		AIAUPC6AA2	PC BOARD			1
75		61G0603102	CHIPR 1KOHM +-5% 1/10W	R207		1
76		61G0603102	CHIPR 1KOHM +-5% 1/10W	R208		1
77		61G0603183	CHIP resistors 1/10W	R201		1

78		61G0603183	CHIP resistors 1/10W	R203		1
79		61G0603203	RST CHIP 20K 1/10W 5%	R210		1
80		61G0603203	RST CHIP 20K 1/10W 5%	R211		1
81		61G0603204	RST CHIP 200K 1/10W 5%	R202		1
82		61G0603224	RST CHIP 220K 1/10W 5%	R212		1
83		65G0603101 31	CHIP 100P 50V NPO	C211		1
84		65G0603101 31	CHIP 100P 50V NPO	C212		1
85		65G0603104 32	CHIP 0.1UF 50V X7R	C203		1
86		65G0603104 32	CHIP 0.1UF 50V X7R	C213		1
87		65G0603474 27	CHIP 0.47UF 25V Y5V	C204		1
88		65G0603474 27	CHIP 0.47UF 25V Y5V	C206		1
89		67G 305100 4T	105℃ 10uF 25V	C210		1
90		67G 305109 7T	105℃ 1uF 50V	C209		1
91		95G 90 23	TINCOATEDCOPPER	J201		1
92		95G 90 23	TINCOATEDCOPPER	J202		1
93		95G 90 23	TINCOATEDCOPPER	J203		1
94		95G 90 23	TINCOATEDCOPPER	J204		1
95		95G 90 23	TINCOATEDCOPPER	J205		1
96		95G 90 23	TINCOATEDCOPPER	J206		1
97		95G 90 23	TINCOATEDCOPPER	J208		1
98		715G2472 1	AUDIO BOARD			1
99		SMTC6HM9VSA1	MAIN BOARD			1
100		33G3802 9	WAFER 2.0MM 9P	CN701		1
101		33G801710A H	WAFER 2.0MM 10P	CN403		1
102		33G8027 12	WAFER 2*6P 2.0MM R/A	CN404		1
103		33G802724B H	WAFER&PLUG	CN703		1
104		40G 45762412B	CBPC LABEL			1.05
105		67G215L101 4N	LOW ESR EC 100UF 25V NCC	C702		1
106		67G215V100 7R	LOW E.S.R 10UF+/-20% 50V	C706		1
107		67G215V100 7R	LOW E.S.R 10UF+/-20% 50V	C708		1
108		67G305V100 3	CAPACITOR 10UF/16V	C426		1
109		67G305V100 3	CAPACITOR 10UF/16V	C441		1
110		67G305V100 3	CAPACITOR 10UF/16V	C711		1
111		67G305V101 4	100UF 25V	C701		1
112		67G305V220 3	22UF 16V	C712		1
113		88G 35315F H	D-SUB 15PIN	CN401		1
114		93G 22 53	CRYSTAL 14.31818MHZ HC-4	X401		1
115		56G 562161	IC TSUM16AL-LF-1 PQFP-10	U401		1
116		56G 56327A	IC AP1117E18LA	U702		1
117		56G 585 4A	IC AP1117E33LA	U701		1

118		56G1133 32	IC M24C04-WMN6TP SO8	U406		1
119		56G1133 84	AF24BC02-SI SOIC-8	U403		1
120		56G1133713 X	PM25LV010A-100SCE	U402		1
121		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q402		1
122		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q405		1
123		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q701		1
124		57G 417 12 T	2N3904S-RTK/PS SOT-23	Q702		1
125		57G 417 13 T	2N3906S-RTK/PS SOT-23	Q403		1
126		57G 417 13 T	2N3906S-RTK/PS SOT-23	Q404		1
127		57G 417 13 T	2N3906S-RTK/PS SOT-23	Q410		1
128		57G 417 13 T	2N3906S-RTK/PS SOT-23	Q704		1
129		57G 758 1	2N7002E-TI	Q408		1
130		57G 758 1	2N7002E-TI	Q409		1
131		57G 763 1	AO3401L	Q703		1
132		61G0402000	RST CHIP JUMP MAX 0R05 1	R467		1
133		61G0402000	RST CHIP JUMP MAX 0R05 1	R471		1
134		61G0402100	RST CHIP 10R 1/16W 5%	R507		1
135		61G0402100	RST CHIP 10R 1/16W 5%	R508		1
136		61G0402101	RST CHIP 100R 1/16W 5%	R405		1
137		61G0402101	RST CHIP 100R 1/16W 5%	R407		1
138		61G0402101	RST CHIP 100R 1/16W 5%	R409		1
139		61G0402101	RST CHIP 100R 1/16W 5%	R460		1
140		61G0402101	RST CHIP 100R 1/16W 5%	R461		1
141		61G0402101	RST CHIP 100R 1/16W 5%	R462		1
142		61G0402101	RST CHIP 100R 1/16W 5%	R463		1
143		61G0402101	RST CHIP 100R 1/16W 5%	R472		1
144		61G0402101	RST CHIP 100R 1/16W 5%	R474		1
145		61G0402101	RST CHIP 100R 1/16W 5%	R476		1
146		61G0402101	RST CHIP 100R 1/16W 5%	R511		1
147		61G0402102	RST CHIP 1K 1/16W 5%	R414		1
148		61G0402102	RST CHIP 1K 1/16W 5%	R416		1
149		61G0402102	RST CHIP 1K 1/16W 5%	R422		1
150		61G0402102	RST CHIP 1K 1/16W 5%	R485		1
151		61G0402102	RST CHIP 1K 1/16W 5%	R701		1
152		61G0402103	RST CHIP 10K 1/16W 5%	R411		1
153		61G0402103	RST CHIP 10K 1/16W 5%	R418		1
154		61G0402103	RST CHIP 10K 1/16W 5%	R420		1
155		61G0402103	RST CHIP 10K 1/16W 5%	R421		1
156		61G0402103	RST CHIP 10K 1/16W 5%	R443		1
157		61G0402103	RST CHIP 10K 1/16W 5%	R445		1

158		61G0402103	RST CHIP 10K 1/16W 5%	R449		1
159		61G0402103	RST CHIP 10K 1/16W 5%	R451		1
160		61G0402103	RST CHIP 10K 1/16W 5%	R457		1
161		61G0402103	RST CHIP 10K 1/16W 5%	R465		1
162		61G0402103	RST CHIP 10K 1/16W 5%	R469		1
163		61G0402103	RST CHIP 10K 1/16W 5%	R473		1
164		61G0402103	RST CHIP 10K 1/16W 5%	R475		1
165		61G0402103	RST CHIP 10K 1/16W 5%	R477		1
166		61G0402103	RST CHIP 10K 1/16W 5%	R486		1
167		61G0402103	RST CHIP 10K 1/16W 5%	R509		1
168		61G0402103	RST CHIP 10K 1/16W 5%	R510		1
169		61G0402103	RST CHIP 10K 1/16W 5%	R512		1
170		61G0402103	RST CHIP 10K 1/16W 5%	R513		1
171		61G0402103	RST CHIP 10K 1/16W 5%	R514		1
172		61G0402103	RST CHIP 10K 1/16W 5%	R515		1
173		61G0402103	RST CHIP 10K 1/16W 5%	R519		1
174		61G0402103	RST CHIP 10K 1/16W 5%	R704		1
175		61G0402103	RST CHIP 10K 1/16W 5%	R708		1
176		61G0402103	RST CHIP 10K 1/16W 5%	R710		1
177		61G0402103	RST CHIP 10K 1/16W 5%	R721		1
178		61G0402200	RST CHIP 20R 1/16W 5%	R446		1
179		61G0402200	RST CHIP 20R 1/16W 5%	R447		1
180		61G0402203	RST CHIP 20K 1/16W 5%	R412		1
181		61G0402222	RST CHIP 2K2 1/16W 5%	R413		1
182		61G0402222	RST CHIP 2K2 1/16W 5%	R415		1
183		61G0402223	RST CHIP 22K 1/16W 5%	R456		1
184		61G0402241	RST CHIP 240R 1/16W 5%	R466		1
185		61G0402390 0F	RST CHIP 390R 1/16W 1%	R442		1
186		61G0402470	RST CHIP 47R 1/16W 5%	R417		1
187		61G0402470	RST CHIP 47R 1/16W 5%	R419		1
188		61G0402470	RST CHIP 47R 1/16W 5%	R499		1
189		61G0402470	RST CHIP 47R 1/16W 5%	R502		1
190		61G0402470	RST CHIP 47R 1/16W 5%	R503		1
191		61G0402470	RST CHIP 47R 1/16W 5%	R506		1
192		61G0402471	RST CHIP 470R 1/16W 5%	R410		1
193		61G0402472	RST CHIP 4K7 1/16W 5%	R464		1
194		61G0402472	RST CHIP 4K7 1/16W 5%	R468		1
195		61G0402472	RST CHIP 4K7 1/16W 5%	R484		1
196		61G0402472	RST CHIP 4K7 1/16W 5%	R500		1
197		61G0402472	RST CHIP 4K7 1/16W 5%	R504		1

198		61G0402472	RST CHIP 4K7 1/16W 5%	R702		1
199		61G0402472	RST CHIP 4K7 1/16W 5%	R703		1
200		61G0402472	RST CHIP 4K7 1/16W 5%	R705		1
201		61G0402472	RST CHIP 4K7 1/16W 5%	R709		1
202		61G0402513	RST CHIP 51K 1/16W 5%	R711		1
203		61G0402562 9F	PST CHIP 56R2 1/16W 1%	R404		1
204		61G0402562 9F	PST CHIP 56R2 1/16W 1%	R406		1
205		61G0402562 9F	PST CHIP 56R2 1/16W 1%	R408		1
206		61G0402750	RST CHIP 75R 1/16W 5%	R470		1
207		61G0402750 9F	RST CHIP 75 OHM 1/16W 1%	R401		1
208		61G0402750 9F	RST CHIP 75 OHM 1/16W 1%	R402		1
209		61G0402750 9F	RST CHIP 75 OHM 1/16W 1%	R403		1
210		61G0603000	CHIPR 0OHM +-5% 1/10W	FB401		1
211		61G0603000	CHIPR 0OHM +-5% 1/10W	FB402		1
212		61G0603000	CHIPR 0OHM +-5% 1/10W	FB403		1
213		61G0603103	CHIPR 10KOHM+-5% 1/10W	R712		1
214		61G1206000	CHIP resistors 1/3W	R706		1
215		61G1206151	RST CHIP 150R 1/4W 5%	R713		1
216		61G1206151	RST CHIP 150R 1/4W 5%	R714		1
217		65G0402104 15	MLCC 0402 CAP 0.1UF K	C401		1
218		65G0402104 15	MLCC 0402 CAP 0.1UF K	C402		1
219		65G0402104 15	MLCC 0402 CAP 0.1UF K	C403		1
220		65G0402104 15	MLCC 0402 CAP 0.1UF K	C424		1
221		65G0402104 15	MLCC 0402 CAP 0.1UF K	C436		1
222		65G0402104 15	MLCC 0402 CAP 0.1UF K	C437		1
223		65G0402104 15	MLCC 0402 CAP 0.1UF K	C438		1
224		65G0402104 15	MLCC 0402 CAP 0.1UF K	C439		1
225		65G0402104 15	MLCC 0402 CAP 0.1UF K	C440		1
226		65G0402104 15	MLCC 0402 CAP 0.1UF K	C446		1
227		65G0402104 15	MLCC 0402 CAP 0.1UF K	C455		1
228		65G0402104 15	MLCC 0402 CAP 0.1UF K	C704		1
229		65G0402104 15	MLCC 0402 CAP 0.1UF K	C705		1
230		65G0402104 15	MLCC 0402 CAP 0.1UF K	C707		1
231		65G0402104 15	MLCC 0402 CAP 0.1UF K	C709		1
232		65G0402104 15	MLCC 0402 CAP 0.1UF K	C710		1
233		65G0402105 05	MLCC 0402 1μF6.3V X5R	C450		1
234		65G0402220 31	CHIP 22pF 50V NPO	C428		1
235		65G0402220 31	CHIP 22pF 50V NPO	C429		1
236		65G0402221 32	MLCC 0402 CAP 220PF J 50	C412		1
237		65G0402221 32	MLCC 0402 CAP 220PF J 50	C433		1

238		65G0402221 32	MLCC 0402 CAP 220PF J 50	C434		1
239		65G0402224 17	CHIP 0.22UF 16V Y5V	C413		1
240		65G0402224 17	CHIP 0.22UF 16V Y5V	C425		1
241		65G0402224 17	CHIP 0.22UF 16V Y5V	C448		1
242		65G0402330 31	CHIP 33PF 50V NPO	C411		1
243		65G0402330 31	CHIP 33PF 50V NPO	C432		1
244		65G0402473 12	CHIP 0.047UF 16V X7R	C404		1
245		65G0402473 12	CHIP 0.047UF 16V X7R	C405		1
246		65G0402473 12	CHIP 0.047UF 16V X7R	C406		1
247		65G0402473 12	CHIP 0.047UF 16V X7R	C407		1
248		65G0402473 12	CHIP 0.047UF 16V X7R	C408		1
249		65G0402473 12	CHIP 0.047UF 16V X7R	C409		1
250		65G0402473 12	CHIP 0.047UF 16V X7R	C410		1
251		65G0402473 12	CHIP 0.047UF 16V X7R	C430		1
252		65G0402473 12	CHIP 0.047UF 16V X7R	C431		1
253		65G0402473 12	CHIP 0.047UF 16V X7R	C435		1
254		65G0402473 12	CHIP 0.047UF 16V X7R	C442		1
255		65G0402473 12	CHIP 0.047UF 16V X7R	C443		1
256		65G0402473 12	CHIP 0.047UF 16V X7R	C444		1
257		65G0402473 12	CHIP 0.047UF 16V X7R	C445		1
258		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB405		1
259		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB406		1
260		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB407		1
261		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB408		1
262		71G 56Z601 M	CHIP BEAD 0805 600OHM	FB409		1
263		93G 64 42 P	BAV70 DIODE	D412		1
264		93G 6432P	LL4148 MINI-MELF/LL-34	D414		1
265		93G 6433P	BAV99 SOT-23	D401		1
266		93G 6433P	BAV99 SOT-23	D402		1
267		93G 6433P	BAV99 SOT-23	D403		1
268		93G 6433P	BAV99 SOT-23	D415		1
269		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD401		1
270		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD402		1
271		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD403		1
272		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD404		1
273		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD405		1
274		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD406		1
275		93G 39S 34 T	ZENER DIODE UDZS5.6B	ZD407		1
276		715G2467 1	MAIN BOARD			1
277		SMTKEPC6AAF	KEPCBOARD FOR SMT			1

278		33G3802 2H	WAFTER	CN002		1
279		33G3802 2H	WAFTER	CN003		1
280		33G8027 12 H	WAFER 2*6P 2.0mm R/A	CN001		1
281		77G 600 1GCJ	SWITCH	SW001		1
282		77G 600 1GCJ	SWITCH	SW002		1
283		77G 600 1GCJ	SWITCH	SW003		1
284		77G 600 1GCJ	SWITCH	SW004		1
285		77G 600 1GCJ	SWITCH	SW005		1
286		81G 12 1F GH	LED GHZYG603D2-5B	LED001		1
287		95G 900 57	Wire Harness 70mm	C12		1
288		AIKEPC6AAF	PC BOARD			1
289		61G0603102	CHIPR 1KOHM +-5% 1/10W	R005		1
290		61G0603392	CHIP 3.9K OHM 1/10W	R001		1
291		61G0603392	CHIP 3.9K OHM 1/10W	R002		1
292		61G0603392	CHIP 3.9K OHM 1/10W	R003		1
293		95G 90 23	TINCOATEDCOPPER	J1		1
294		95G 90 23	TINCOATEDCOPPER	J3		1
295		95G 90 23	TINCOATEDCOPPER	J4		1
296		95G 90 23	TINCOATEDCOPPER	J5		1
297		715G2473 1	KEY BOARD			1
298		PW942HV1SMTJ	POWER BOARD FOR SMT			1
299		S73G17465VW	LINE FILTER	L902		1
300		S73G25391V	CHOKE	L903		1
301		S73G25391V	CHOKE	L904		1
302		S80GL19T8V1	X'FMR	PT801		1
303		S80GL19T8V1	X'FMR	PT802		1
304		9G6005 1	PIN FOOT	GND1		1
305		33G8021 2E U	3.5MM WAFER	CN801		1
306		33G8021 2E U	3.5MM WAFER	CN802		1
307		33G8021 2E U	3.5MM WAFER	CN803		1
308		33G8021 2E U	3.5MM WAFER	CN804		1
309		40G 45762420A	ID LABEL			2
310		51G 6 4503	RTV GLUE			2
311		56G 139 5A	TCET1103G	IC902		1
312		61G 58080 WT	NTCR	NR901		1
313		63G 10747410S	0.47UF +-10% 250VAC	C903		1
314		65G 3J2206ET	22PF 5% 3KV TDK	C816		1
315		65G 3J2206ET	22PF 5% 3KV TDK	C834		1
316		65G 3J2206ET	22PF 5% 3KV TDK	C837		1
317		65G 3J2206ET	22PF 5% 3KV TDK	C841		1

318		65G 3J5096ET	5PF 5% SL 3KV	C824		1
319		65G 3J5096ET	5PF 5% SL 3KV	C825		1
320		65G 3J5096ET	5PF 5% SL 3KV	C826		1
321		65G 3J5096ET	5PF 5% SL 3KV	C835		1
322		65G305M1022BP	Y2 1000PF M 250VAC Y5P	C901		1
323		65G305M1022BP	Y2 1000PF M 250VAC Y5P	C902		1
324		65G306M2222BP	2200PF Y1 400 20% BY UK	C900		1
325		67G 31510115K	EC 100uF 450V PW2W101MNN	C905		1
326		67G215D4714KV	EC 105? CAP 470uF M 25V	C811		1
327		67G215D4714KV	EC 105? CAP 470uF M 25V	C815		1
328		67G215D4714KV	EC 105? CAP 470uF M 25V	C904		1
329		67G215D4714KV	EC 105? CAP 470uF M 25V	C911		1
330		67G215D4714KV	EC 105? CAP 470uF M 25V	C912		1
331		67G215D4714KV	EC 105? CAP 470uF M 25V	C935		1
332		67G215D4714KV	EC 105? CAP 470uF M 25V	C936		1
333		67G215D4714KV	EC 105? CAP 470uF M 25V	C937		1
334		73L 174 53 LG GP	LINE FILTER	L901		1
335		80GL17T 37 L GP	X'FMR 750uH PT-005477-2	T901		1
336		87G 501 36 S	AC SOCKET	CN901		1
337		93G 50460900	GBU408	BD901		1
338		95G 90 23	TINCOATEDCOPPER	JP914		1
339		95G8014 12707 JT	WIRE HARNESS	CN902		1
340		705G 980 61S01	R905 ASS'Y			1
341		705G 980 61S02	R914 ASS'Y			1
342		705GQ7K0 57001	Q903 ASS'Y			1
343		705GQ7K0 93001	D908 ASS'Y			1
344		705GQ7K0 93003	D909 ASS'Y			1
345		PW942HV1AIJ	POWER BOARD FOR AI			1
346		56G 379 61	LD7575 PS SOP-8	IC901		1
347		56G 608 10	OZ9938GN SOIC-16	IC801		1
348		57G 417 4	PMBS3904/PLILIPS	Q801		1
349		57G 417 4	PMBS3904/PLILIPS	Q802		1
350		57G 417 4	PMBS3904/PLILIPS	Q803		1
351		57G 759 2	TRANSISTOR RK7002 SOT-3	Q804		1
352		57G 759 2	TRANSISTOR RK7002 SOT-3	Q807		1
353		57G 759 2	TRANSISTOR RK7002 SOT-3	Q808		1
354		57G 759 2	TRANSISTOR RK7002 SOT-3	Q809		1
355		57G 759 2	TRANSISTOR RK7002 SOT-3	Q810		1
356		57G 763 14	AM9945N-T1-PF SOIC-8	Q805		1
357		57G 763 14	AM9945N-T1-PF SOIC-8	Q806		1

358		61G0805000	RST CHIP MAX 0R05 1/8W	JR801		1
359		61G0805000	RST CHIP MAX 0R05 1/8W	JR804		1
360		61G0805000	RST CHIP MAX 0R05 1/8W	JR805		1
361		61G0805000	RST CHIP MAX 0R05 1/8W	JR807		1
362		61G0805000	RST CHIP MAX 0R05 1/8W	R825		1
363		61G0805100 3F	RST CHIPR 100KOHM +-1% 1	R913		1
364		61G0805100 4F	RST CHIPR 1 MOHM +-1% 1/	R810		1
365		61G0805100 4F	RST CHIPR 1 MOHM +-1% 1/	R816		1
366		61G0805102	CHIPR 1K OHM +-5% 1/10W	R836		1
367		61G0805102	CHIPR 1K OHM +-5% 1/10W	R843		1
368		61G0805102	CHIPR 1K OHM +-5% 1/10W	R920		1
369		61G0805102	CHIPR 1K OHM +-5% 1/10W	R921		1
370		61G0805102	CHIPR 1K OHM +-5% 1/10W	R922		1
371		61G0805102	CHIPR 1K OHM +-5% 1/10W	R926		1
372		61G0805103	CHIP 10KOHM 1/10W	R803		1
373		61G0805103	CHIP 10KOHM 1/10W	R804		1
374		61G0805103	CHIP 10KOHM 1/10W	R806		1
375		61G0805103	CHIP 10KOHM 1/10W	R812		1
376		61G0805103	CHIP 10KOHM 1/10W	R912		1
377		61G0805104	RST CHIP 100K 1/8W 5%	R801		1
378		61G0805104	RST CHIP 100K 1/8W 5%	R815		1
379		61G0805105	RST CHIP 1M 1/8W 5%	R813		1
380		61G0805105	RST CHIP 1M 1/8W 5%	R846		1
381		61G0805105	RST CHIP 1M 1/8W 5%	R847		1
382		61G0805105	RST CHIP 1M 1/8W 5%	R848		1
383		61G0805105	RST CHIP 1M 1/8W 5%	R849		1
384		61G0805105	RST CHIP 1M 1/8W 5%	R860		1
385		61G0805184	RST CHIP 180K 1/8W 5%	C808		1
386		61G0805240 1F	CHIPR 2.4KOHM+-1% 1/10	R924		1
387		61G0805304	RST CHIPR 300 KOHM +-5%	R802		1
388		61G0805330 2F	CHIP 33KOHM 1/10W/1%	R817		1
389		61G0805330 2F	CHIP 33KOHM 1/10W/1%	R923		1
390		61G0805360 0F	RST CHIPR 360 OHM +-1% 1	R841		1
391		61G0805360 1F	CHIP 3.6KOHM 1/10W 1%	R925		1
392		61G0805362	RST CHIPR 3.6 KOHM +-5%	R827		1
393		61G0805362	RST CHIPR 3.6 KOHM +-5%	R831		1
394		61G0805472	RST CHIP 4K7 1/8W 5%	R850		1
395		61G0805472	RST CHIP 4K7 1/8W 5%	R852		1
396		61G0805472	RST CHIP 4K7 1/8W 5%	R853		1
397		61G0805473	RST CHIP 47K 1/8W 5%	R808		1

398		61G0805510 0F	RST CHIPR 510 OHM +-1% 1	R826		1
399		61G0805751	RST CHIPR 750 OHM +-5% 1	R824		1
400		61G0805751	RST CHIPR 750 OHM +-5% 1	R858		1
401		61G0805754	RST CHIPR 750 KOHM +-5%	R814		1
402		61G0805823	RST CHIP 82K 1/8W 5%	R823		1
403		61G0805823	RST CHIP 82K 1/8W 5%	R830		1
404		61G1206000	CHIP resistors 1/3W	D903		1
405		61G1206000	CHIP resistors 1/3W	JR803		1
406		61G1206000	CHIP resistors 1/3W	JR806		1
407		61G1206000	CHIP resistors 1/3W	JR809		1
408		61G1206000	CHIP resistors 1/3W	JR901		1
409		61G1206000	CHIP resistors 1/3W	JR902		1
410		61G1206000 4	CHIP 0OHM 4A	R928		1
411		61G1206000 4	CHIP 0OHM 4A	R932		1
412		61G1206101	CHIP 100OHM 5% 1/8W	R916		1
413		61G1206101	CHIP 100OHM 5% 1/8W	R936		1
414		61G1206101	CHIP 100OHM 5% 1/8W	R937		1
415		61G1206102	CHIP 1K OHM 5% 1/8W	R911		1
416		61G1206103	CHIP 10KOHM 5% 1/8W	R927		1
417		61G1206220	RST CHIP 22R 1/4W 5%	R807		1
418		61G1206220	RST CHIP 22R 1/4W 5%	R910		1
419		61G1206300	RST CHIP 30R 1/4W 5%	R818		1
420		61G1206300	RST CHIP 30R 1/4W 5%	R819		1
421		61G1206300	RST CHIP 30R 1/4W 5%	R828		1
422		61G1206300	RST CHIP 30R 1/4W 5%	R829		1
423		61G1206300	RST CHIP 30R 1/4W 5%	R861		1
424		61G1206300	RST CHIP 30R 1/4W 5%	R862		1
425		61G1206300	RST CHIP 30R 1/4W 5%	R863		1
426		61G1206300	RST CHIP 30R 1/4W 5%	R864		1
427		61G1206392	CHIP 3.9KOHM 5% 1/4W	R904		1
428		61G1206392	CHIP 3.9KOHM 5% 1/4W	R931		1
429		61G1206392	CHIP 3.9KOHM 5% 1/4W	R938		1
430		61G1206470	CHIP resistors 1/3W	R906		1
431		61G1206470	CHIP resistors 1/3W	R934		1
432		61G1206470	CHIP resistors 1/3W	R935		1
433		61G1206471	RST CHIP 47OR 1/4W 5%	R805		1
434		61G1206471	RST CHIP 47OR 1/4W 5%	R919		1
435		61G1206472	CHIP 4.7KOHM 5% 18W	R851		1
436		61G1206519	CHIP resistors 1/3W	R837		1
437		61G1206519	CHIP resistors 1/3W	R842		1

438		61G1206519	CHIP resistors 1/3W	R909		1
439		61G1206684	CHIPR 680KOHM +-5% 1/8W	R901		1
440		61G1206684	CHIPR 680KOHM +-5% 1/8W	R902		1
441		61G1206684	CHIPR 680KOHM +-5% 1/8W	R903		1
442		65G0805102 31	1000PF 50V NPO	C805		1
443		65G0805103 32	CHIP 10000 PF 50V X7R 08	C807		1
444		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C801		1
445		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C828		1
446		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C829		1
447		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C838		1
448		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C839		1
449		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C842		1
450		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C843		1
451		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C844		1
452		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C916		1
453		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C917		1
454		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C918		1
455		65G0805104 32	CHIP 0.1UF 50V X7R 0805	C919		1
456		65G0805105 22	CHIP 1UF 25V X7R 0805	C804		1
457		65G0805105 22	CHIP 1UF 25V X7R 0805	C806		1
458		65G0805105 22	CHIP 1UF 25V X7R 0805	C840		1
459		65G0805221 31	CHIP 220PF 50V NPO	C909		1
460		65G0805224 22	E65	C814		1
461		65G0805332 32	3200PF/25V/X7R	C818		1
462		65G0805332 32	3200PF/25V/X7R	C827		1
463		65G0805471 31	CHIP 470PF 50V NPO	C820		1
464		65G0805471 31	CHIP 470PF 50V NPO	C831		1
465		65G0805471 31	CHIP 470PF 50V NPO	C910		1
466		65G0805473 32	SMD 47NF +-10% 50V	C809		1
467		65G0805473 32	SMD 47NF +-10% 50V	C819		1
468		65G080556131G	MLCC 0805 560PF G 50V NP	C810		1
469		65G1206104 32	CHIP 0.1UF 25V X7R 1206	C908		1
470		65G1206332 72 GP	CHIP 1206 3300PF K 500V	C812		1
471		65G1206332 72 GP	CHIP 1206 3300PF K 500V	C813		1
472		65G1206332 72 GP	CHIP 1206 3300PF K 500V	C822		1
473		65G1206332 72 GP	CHIP 1206 3300PF K 500V	C823		1
474		93G 64 33	BAV99 SOT-23	D801		1
475		93G 64 33	BAV99 SOT-23	D802		1
476		93G 64 33	BAV99 SOT-23	D803		1
477		93G 64 33	BAV99 SOT-23	D804		1

478		93G 64 33	BAV99 SOT-23	D805		1
479		93G 64 33	BAV99 SOT-23	D806		1
480		93G 6432S	1N4148W DIODE	D809		1
481		93G 6432S	1N4148W DIODE	D810		1
482		93G 6432S	1N4148W DIODE	D811		1
483		93G 6432S	1N4148W DIODE	D812		1
484		93G 6432S	1N4148W DIODE	D813		1
485		93G 6432S	1N4148W DIODE	D904		1
486		93G 39S 24 T	RLZ5.6B ROHM	ZD801		1
487		93G 39S 24 T	RLZ5.6B ROHM	ZD902		1
488		93G 39S 38 T	PTZ9.1B ROHM	ZD903		1
489		93G 39S 40 T	RLZ13B ROHM	ZD901		1
490		93G 39S 44 T	RLZ18B LLDS	ZD904		1
491		6G 31500	2.0MM EYELET	CN901		2
492		6G 31502	1.5MM RIVET	C905		2
493		6G 31502	1.5MM RIVET	L901		4
494		6G 31502	1.5MM RIVET	L902		4
495		6G 31502	1.5MM RIVET	NR901		2
496		6G 31502	1.5MM RIVET	PT801		2
497		6G 31502	1.5MM RIVET	PT802		2
498		6G 31502	1.5MM RIVET	Q903		2
499		6G 31502	1.5MM RIVET	T901		6
500		56G 158 4 T	H431BA	IC903		1
501		61G212Y305 KT	MGFR 3M OHM +-5% 1/2W	R822		1
502		61G212Y305 KT	MGFR 3M OHM +-5% 1/2W	R832		1
503		65G 1K102 5T	100PF +/-10% 1KV Y5P	C931		1
504		65G 2K152 1T	CERAMIC CAP	C930		1
505		65G 2K152 1T	CERAMIC CAP	C932		1
506		65G 2K152 1T	CERAMIC CAP	C933		1
507		67G215Y2207KT	LOW ESR EC 22uF 50V 5*1	C906		1
508		71G 55 29	Φ3.5*Φ0.8*2.2\ 100MM>	FB901		1
509		84G 55 7W	250V/3.15A FUSE	F901		1
510		93G 6026W52T	FR107 DO-41 1000V/1A	D901		1
511		93G 6038T52T	FR103 DO-41 200V/1A	D902		1
512		95G 90 23	TINCOATEDCOPPER	C934		1
513		95G 90 23	TINCOATEDCOPPER	JP801		1
514		95G 90 23	TINCOATEDCOPPER	JP805		1
515		95G 90 23	TINCOATEDCOPPER	JP807		1
516		95G 90 23	TINCOATEDCOPPER	JP809		1
517		95G 90 23	TINCOATEDCOPPER	JP811		1

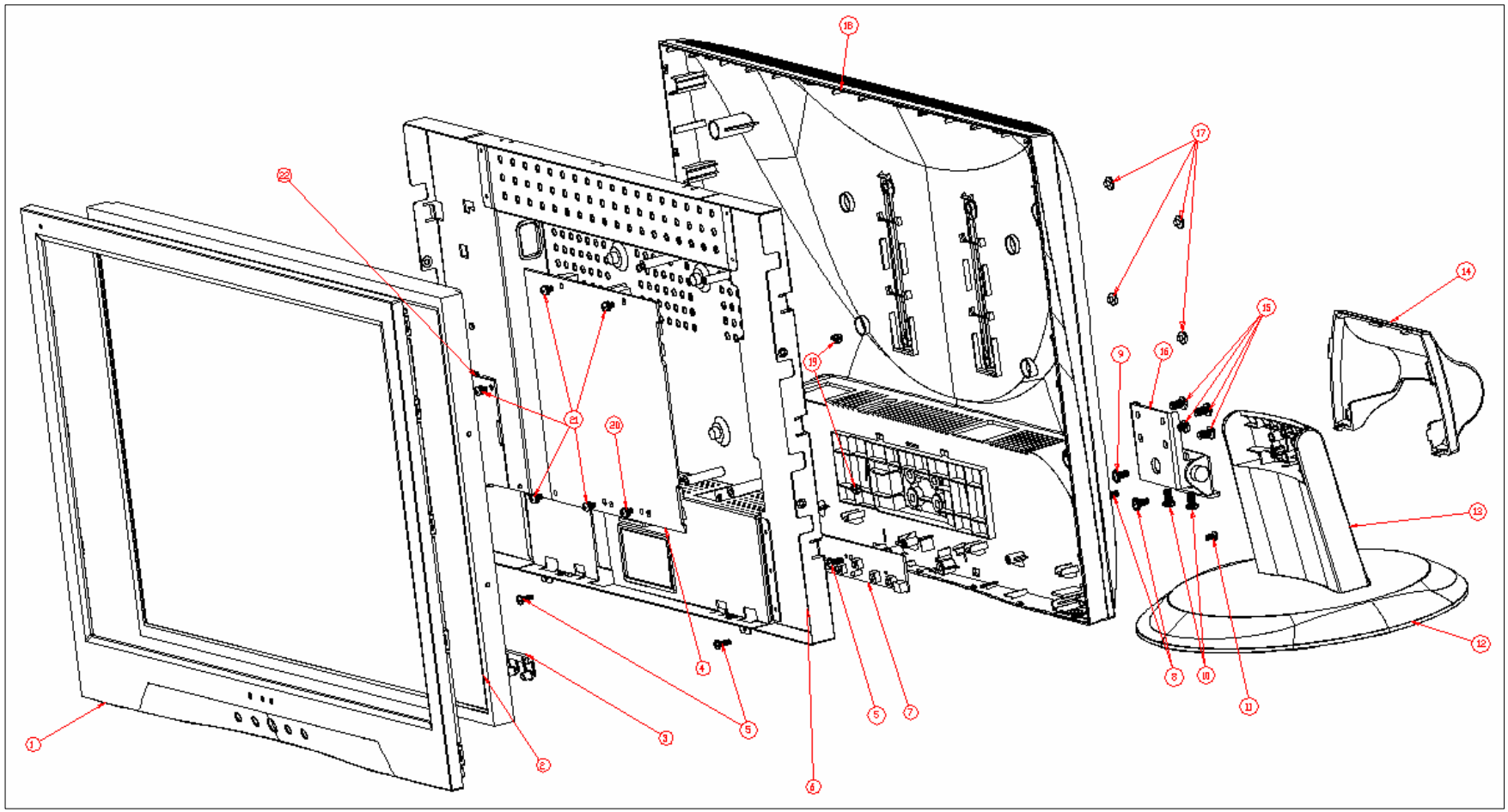
518		95G 90 23	TINCOATEDCOPPER	JP812		1
519		95G 90 23	TINCOATEDCOPPER	JP815		1
520		95G 90 23	TINCOATEDCOPPER	JP817		1
521		95G 90 23	TINCOATEDCOPPER	JP818		1
522		95G 90 23	TINCOATEDCOPPER	JP819		1
523		95G 90 23	TINCOATEDCOPPER	JP820		1
524		95G 90 23	TINCOATEDCOPPER	JP821		1
525		95G 90 23	TINCOATEDCOPPER	JP901		1
526		95G 90 23	TINCOATEDCOPPER	JP903		1
527		95G 90 23	TINCOATEDCOPPER	JP904		1
528		95G 90 23	TINCOATEDCOPPER	JP911		1
529		95G 90 23	TINCOATEDCOPPER	JP917		1
530		95G 90 23	TINCOATEDCOPPER	JP918		1
531		95G 90 23	TINCOATEDCOPPER	JP919		1
532		95G 90 23	TINCOATEDCOPPER	JP920		1
533		95G 90 23	TINCOATEDCOPPER	JP921		1
534		95G 90 23	TINCOATEDCOPPER	JR802		1
535		715G1899 2 VS	POWER BOARD			1
536		61G152M10458F	100K OHM 5% 2W	R905		1
537		96G 29 6 GP	SHRINK TUBE UL/CSA			20
538		61G152M47858F	RST MOFR 0.47OHM +-5% 2W	R914		1
539		96G 29 6 GP	SHRINK TUBE UL/CSA			20
540		57G 667 21	Transistor STP10NK70ZFP	Q903		1
541		AM1G1730 8120	SCREW			1
542		Q90G0035 1	HEAT SINK			1
543		93G 60252	SP20150LF TO-220F15	D908		1
544		AM1G1730 8120	SCREW			1
545		Q90G0009 1	HEAT SINK			1
546		90G6241 2 GP	HEAT SINK			1
547		93G 60248	SP20100-LF ITO-220	D909		1
548		AM1G1730 8120	SCREW			1

Diversity of T96HM9DB1WVSAJ compared with T96HM9DK1WVSNJ

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
2		KEPC6AAG	KEPC BOARD			1
3		89G402A18N LS	POWER CORD			1
4		A34G0028E7Z L	BASE			1
5		A34G0245EA8B1L	BEZEL			1
6		A34G0246E7Z 2L	REAR COVER			1
7		A34G0247E7Z L	STAND			1
8		A34G0248E7Z L	HINGE COVER			1

9		J12G 808 2	VESA RUBBER			4
10		J15G0188 1	MAIN FRAME HYDIS			1
11		J40G190T709 5A	ID VA1903wb-T			1
12		J41G780170917A	SELL CARD			1
13		J41G7802709 1A	QSG			1
14		J44G9012709 1B	CARTON			1
15		J70G1902709 1A	CD MANUAL			1
16		SMTC6HM9VSA2	MAIN BOARD FOR SMT			1
17		SMTKEPC6AAG	KEPC BOARD			1
18		AIKEPC6AAG	KEPC BOARD FOR AI			1

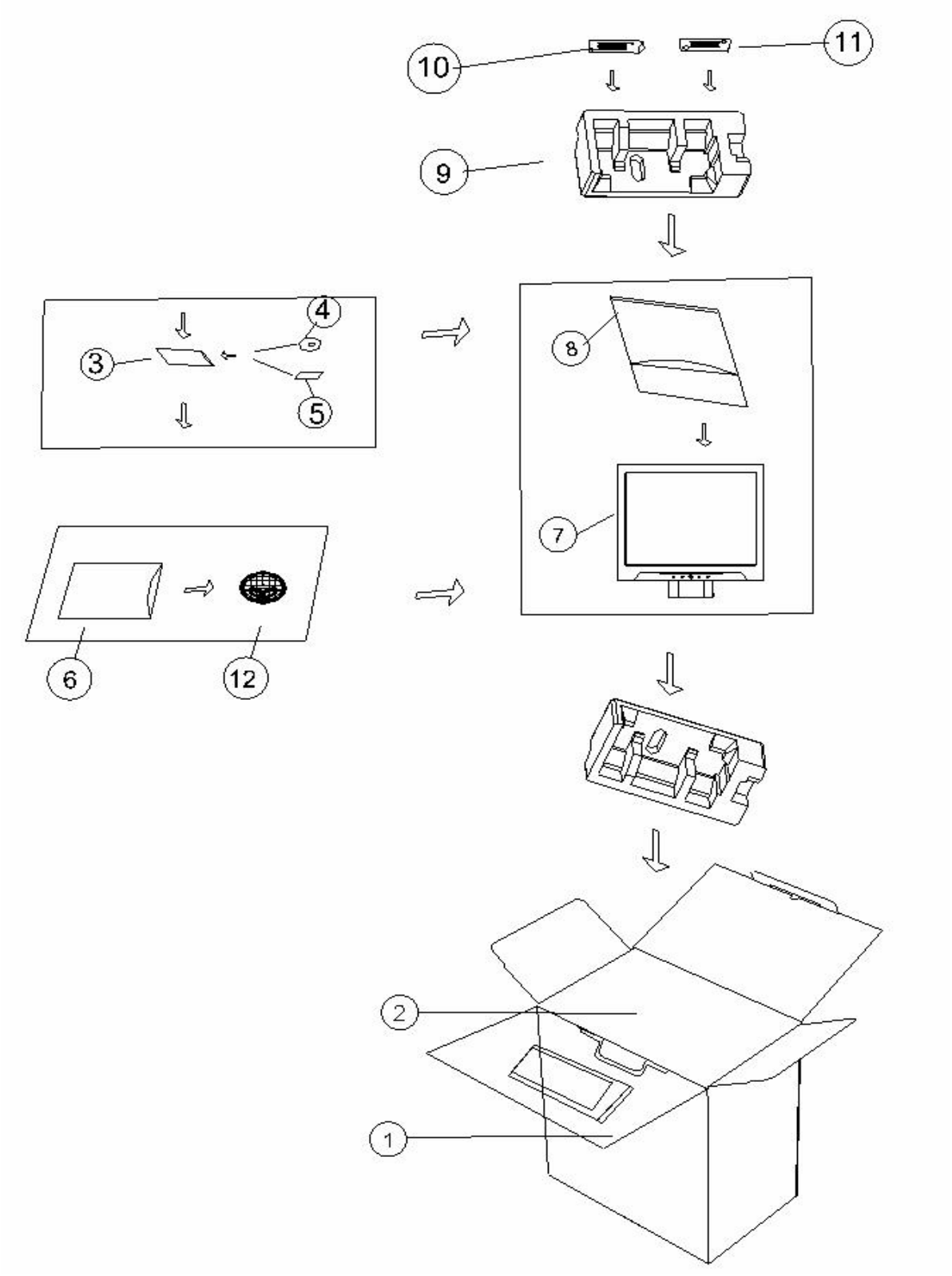
8. Exploded Diagram And Spare Parts List



VA1903wb EPL Part List

ITEM	DESCRIPTION	PART NUMBER	Q'TY
1	BEZEL	A34G0245B4Z L	1
2	PAENL HSD190MGW1-A02 HSD	750GLH90GW121N	1
3	FUNC.BUTTON	33G5019 KD C	1
4	G1899-1A-VS-X-3-061214	PWPC942HV1J	1
5	SCREW	Q1G 330 8120	4
6	MAIN FRAME HYDIS	J15G0188 1	1
7	KEPC BOARD	KEPC6AAG	1
8	SCREW	Q1G1140 10120	2
9	Q4*8	Q1G1740 8120	1
10	SCREW	M1G1740 8120	2
11	SCREW	Q1G 330 8 47 CR3	1
12	BASE	A34G0028 4Z L	1
13	STAND	A34G0247 4Z L	1
14	HINGE COVER	A34G0248 4Z L	1
15	SCREW	M1G2640 12 47 CR3	4
16	HINGE	J37G0090 1	1
17	VESA RUBBER	J12G 808 2	4
18	REAR COVER	A34G0246 4Z 2L	1
19	SCREW M3X5	M1G 130 5120	4
20	SCREW	M1G1140 6120	1
21	M3*6	M1G1730 6120	6
22	G2467-B-X-X-1-20061121	CBPC6HM9VSA2	1
23	VSC17-LCD FRONT LOGO	23G3178709 3A	1
24	VSC17-LCD FRONT LOGO	23G3178709 4A	1

Packing For Shipping



Packing Part List

ITEM	DESCRIPTION	PART NUMBER	Q'TY
1	CARTON	J44G9012709 1A	1
2	HANDLE1/2	J50G 600 5/6	1
3	PE BAG	45G 76 28 V3A	1
4	CD MANUAL	J70G1902709 1A	1
5	QSG	J41G7802709 1A	1
6	EPE COVER	J45G 88606 R	1
7	MONITOR	T96HM9DD1WVSNJ	1
8	PE BAG	J45G 88626 1 R	1
9	EPS	J44G9012 1/2	1
10	POWER CORD	89G414A18N LS	1
11	SIGNAL CABLE	89G 728HAA902	1
12	BASE	A34G0028E4Z L	1

9. Disassemble Process

9.1 Units Disassemble Process

9.1.1 *Tools*

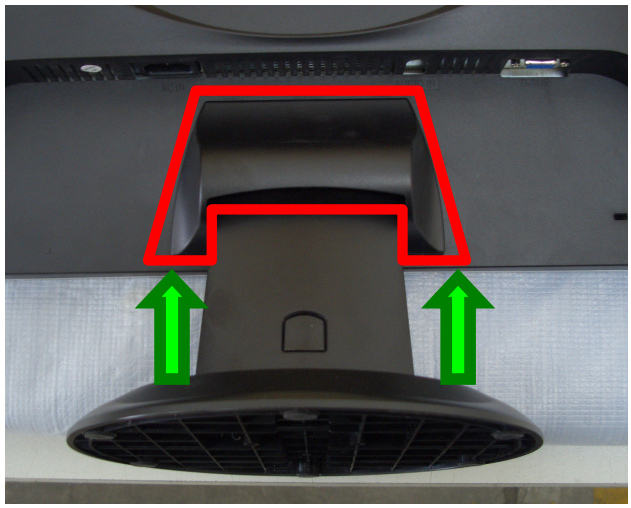
- ✧ Glove
- ✧ Big cross screwdriver
- ✧ Small cross screwdriver
- ✧ Prize equipment or abandoned IC card
- ✧ Screw box
- ✧ Cushion
- ✧ Six angle sleeve spanner

9.1.2 Disassemble process

1、 Tide up the worktable, spread straight cushion, put the monitor on it, the front side adown.(**Picture 1**)
2、 Remove the decorate slice of the back cover.(**Picture 2, 3**)
3、 Disassemble the 4 screws that fix the stand, remove the stand.(**Picture, 4**)
4、 Disassemble the 1 screws of the back cover.（**Picture 5**）
5、 Use equipment or abandoned IC card to prize up the bezel through the bottom flute, and rip up the bezel downwards.(as showed in the following the **picture 6,7,8**)
6、 Disassemble the 4 screws and 3 pins of the Key board, remove the Key board. (as showed in the following the **picture 9,10**)
7、 Remove the back cover, refer to the following **picture 11,12**.
8、 Peel of the 2 AL foil and disassemble the 4 pins, as showed in the following the **picture 13,14,15.**
9、 Disassemble the 4 fixed screws of the panel, as showed in the following the **picture16,17**
10、 Lift up the main frame, and press down according to the direction of small arrowhead, then lift down the LVDS connectors according to the direction of big arrowhead, refer to the following **picture 18,19**.
11、 That's all. The disassemble process of the unit is over.

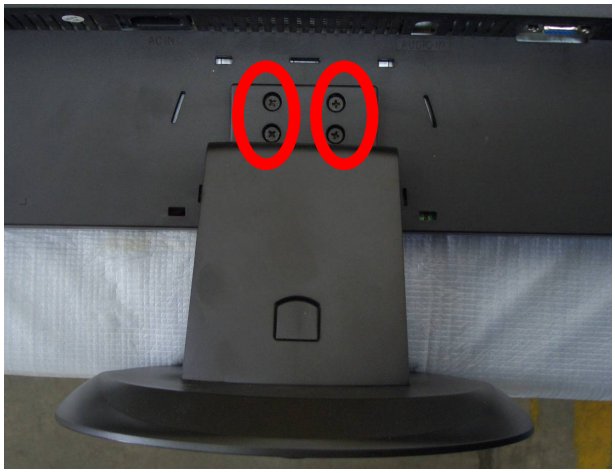
9.1.3 Show pictures：

（Picture 1）



（Picture 2）

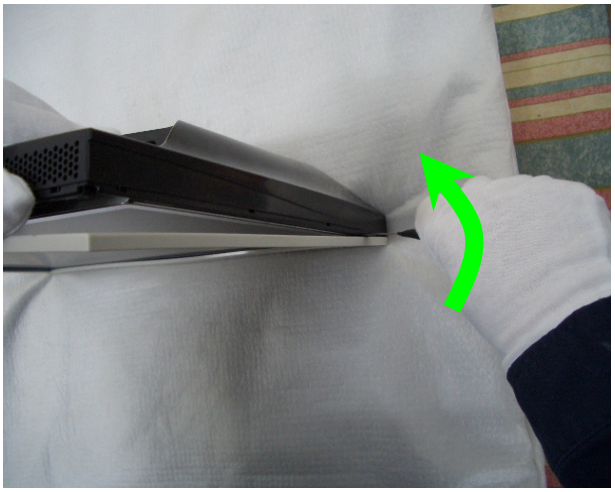
（Picture 3）



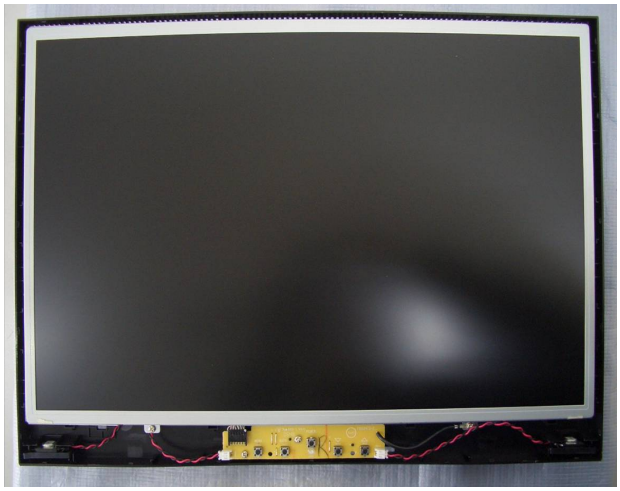
（Picture 4）

（Picture 5）

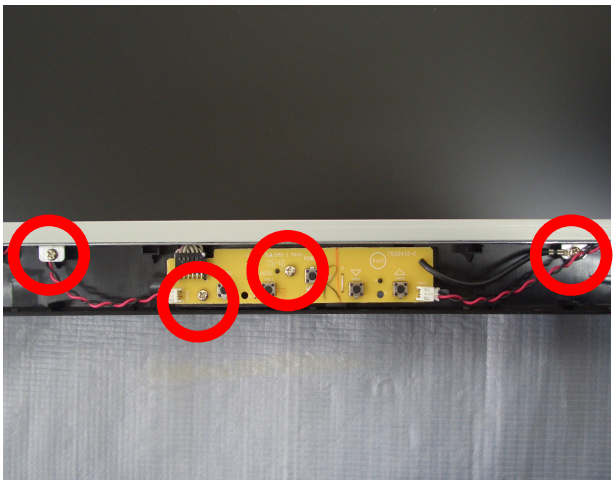
（Picture 6）



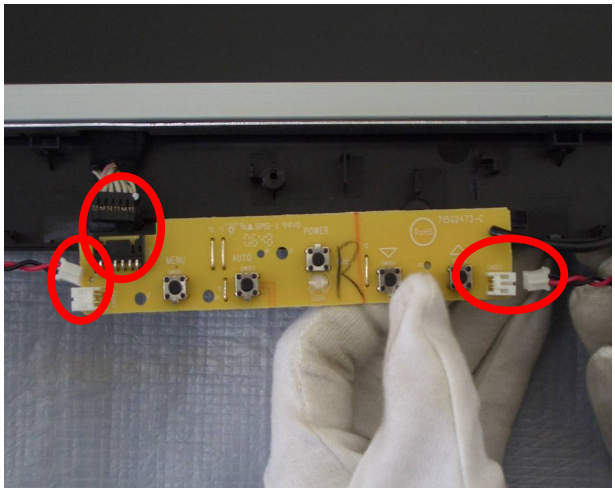
（Picture 7）



（Picture 8）

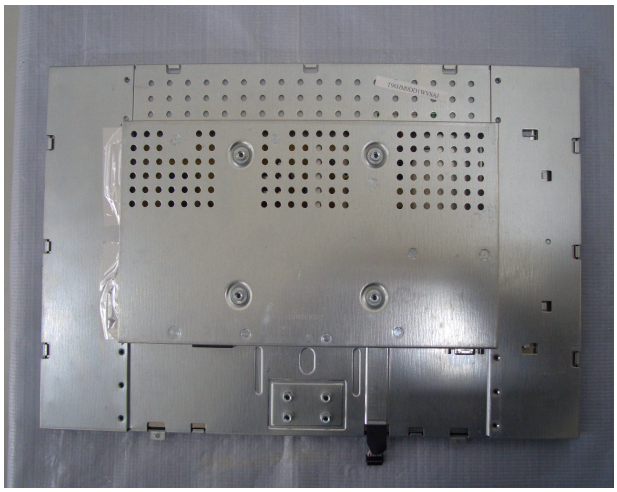


（Picture 9）

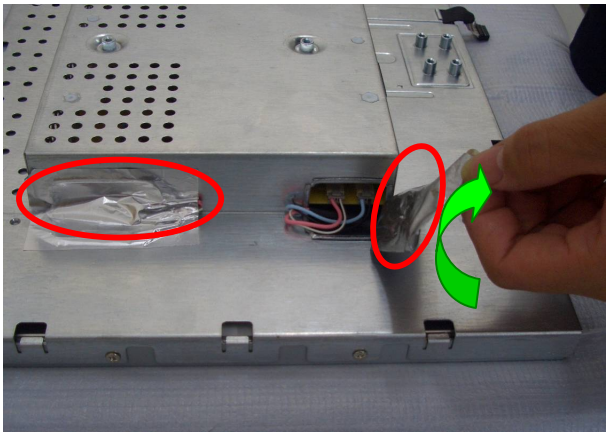


（Picture 10）

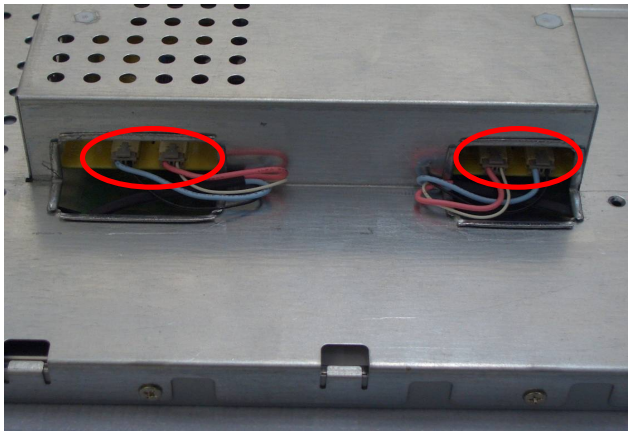
（Picture 11）



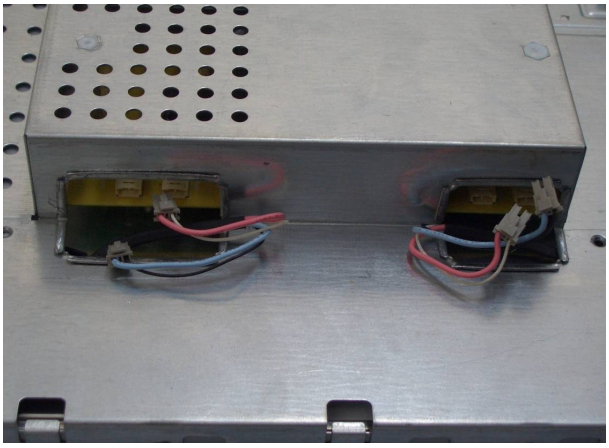
（Picture 12）



（Picture 13）



（Picture 14）



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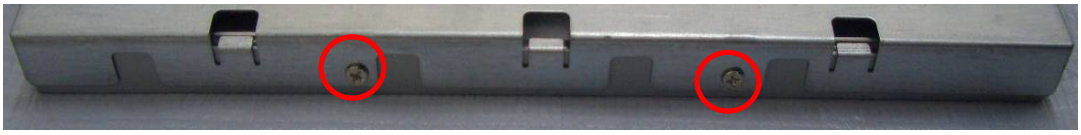
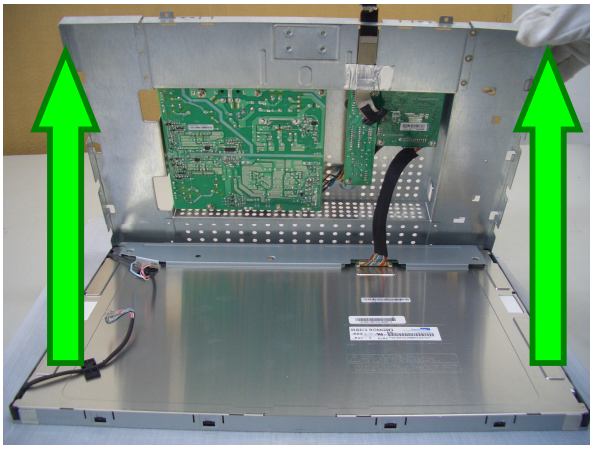
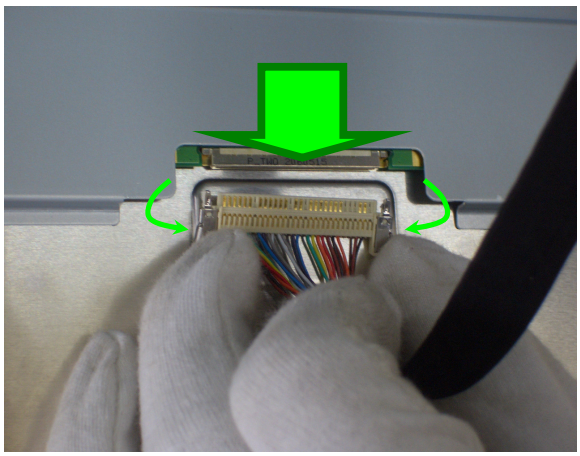


（Picture 16）

（Picture 17）



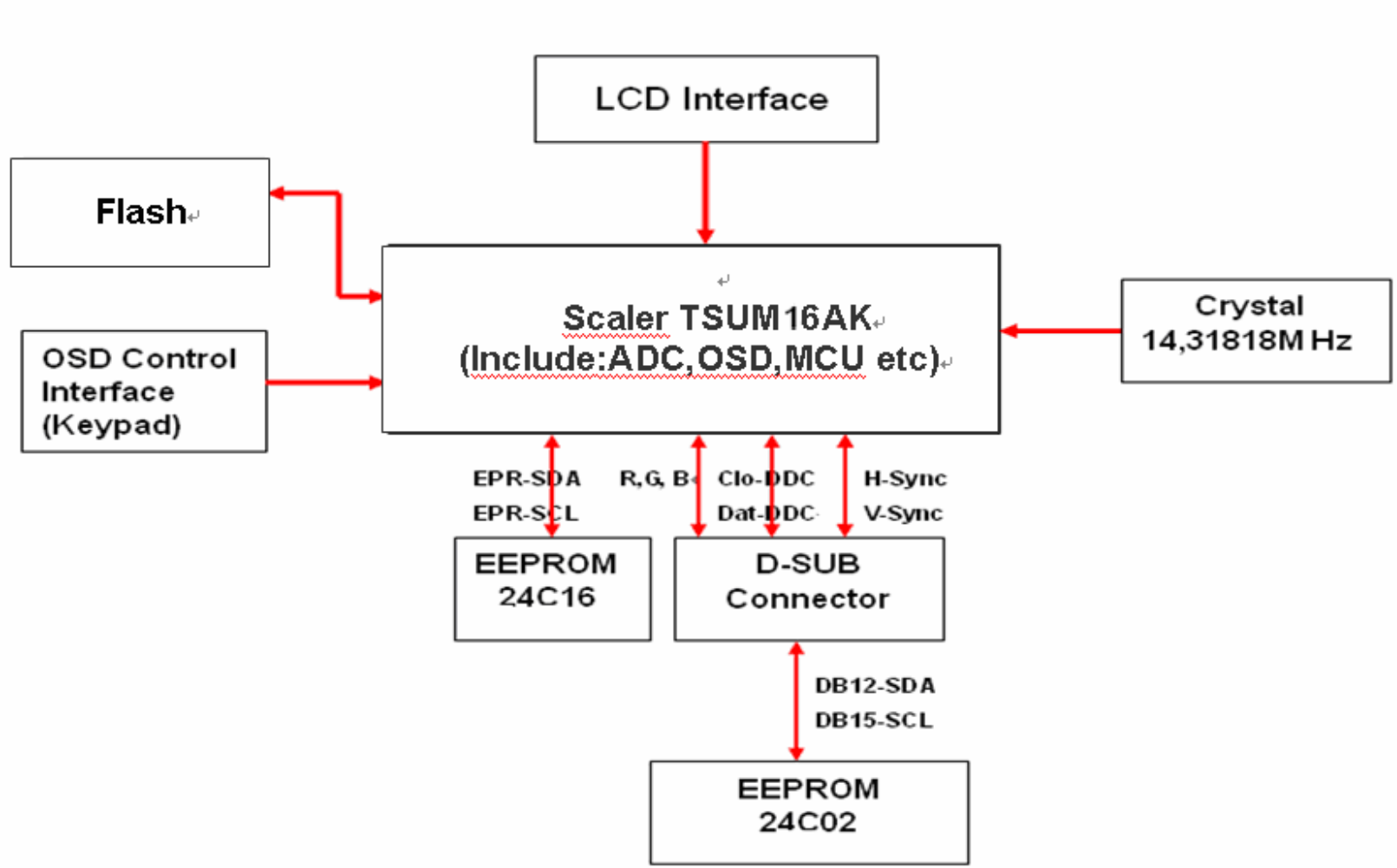
（Picture 18）



（Picture 19）

（**Picture 20**）

10. Block Diagram

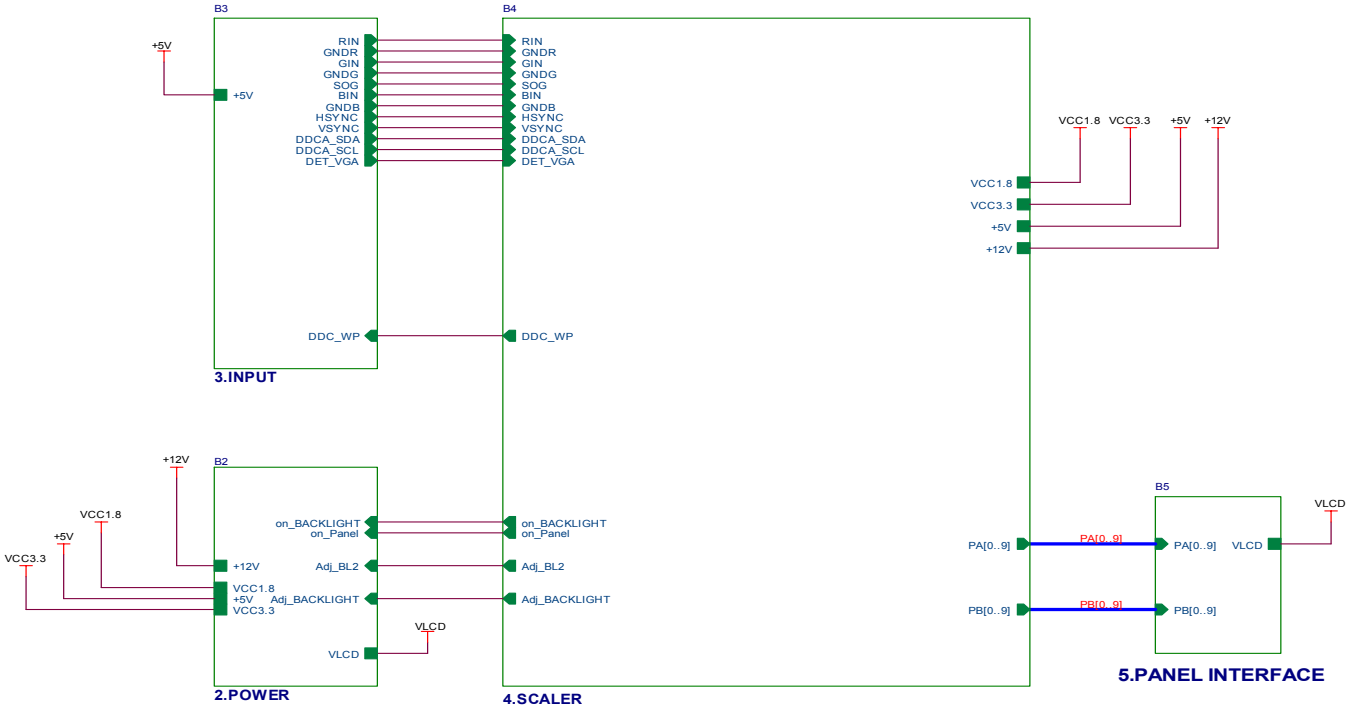


11. Schematic Diagram

11.1 Top

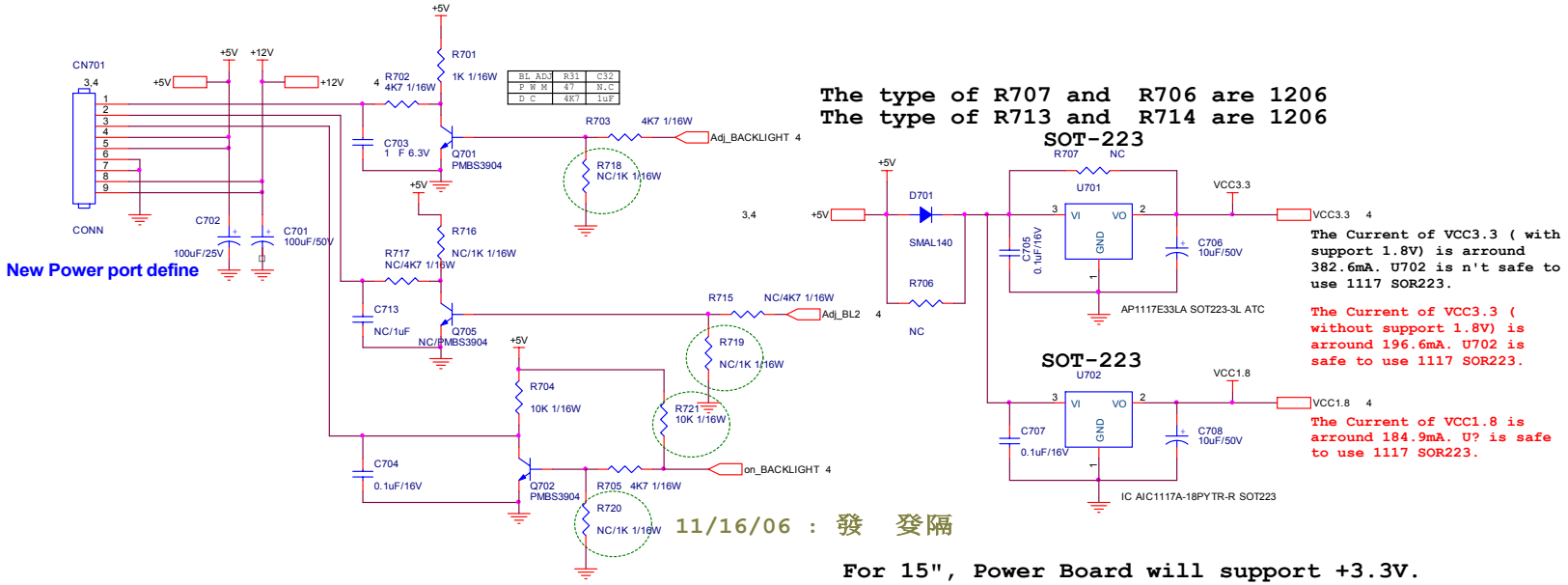
TSUM16AL-1 SCHEMATIC

XGA/SXGA/WSXGA LVDS OUTPUT



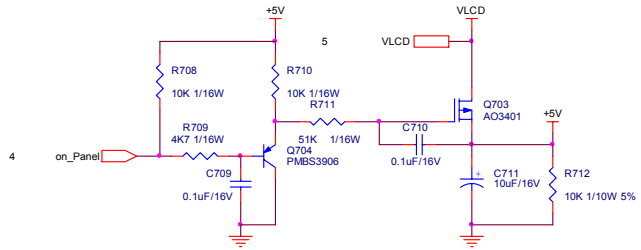
G2467-B-X-X-1-20061124		
Title: 1 Contents		
Size: C	Document Number: 715G2467-A for VA1903WM	Rev: A
Date: Friday, November 24, 2006	Sheet 1 of 5	

11.2 Power



	D701	C707	U701	C705	R713	R714
For 15"	SMAL140	0.1uF	LD1117S33 SOT-223	100uF/25V	X	X
Over 15"	X	X	X	X	0	0

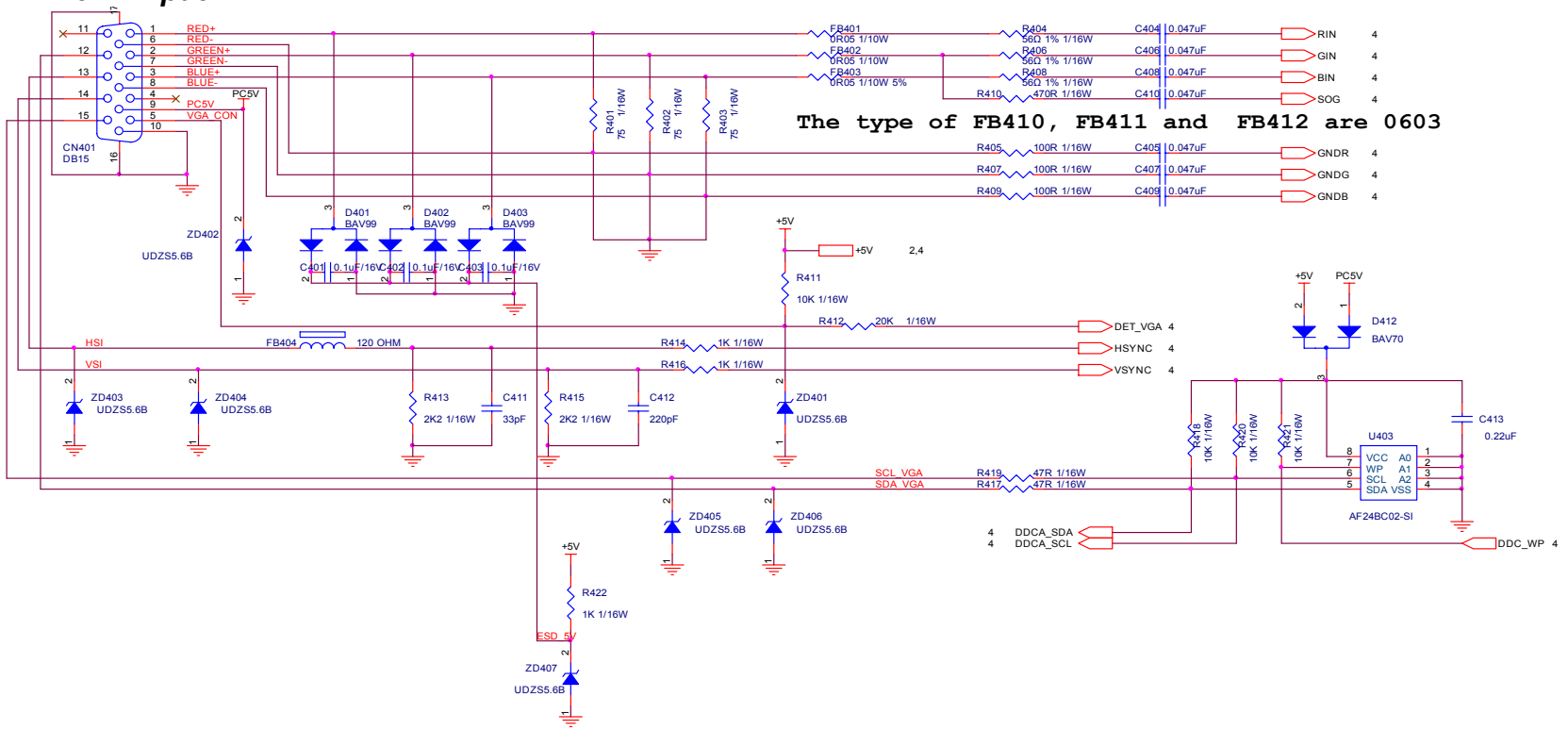
For 15", Power Board will support +3.3V.
And D701, C707, U701, C705, C709 should replace to R713 and R714.



The type of R709 ,R712 ARE 0603

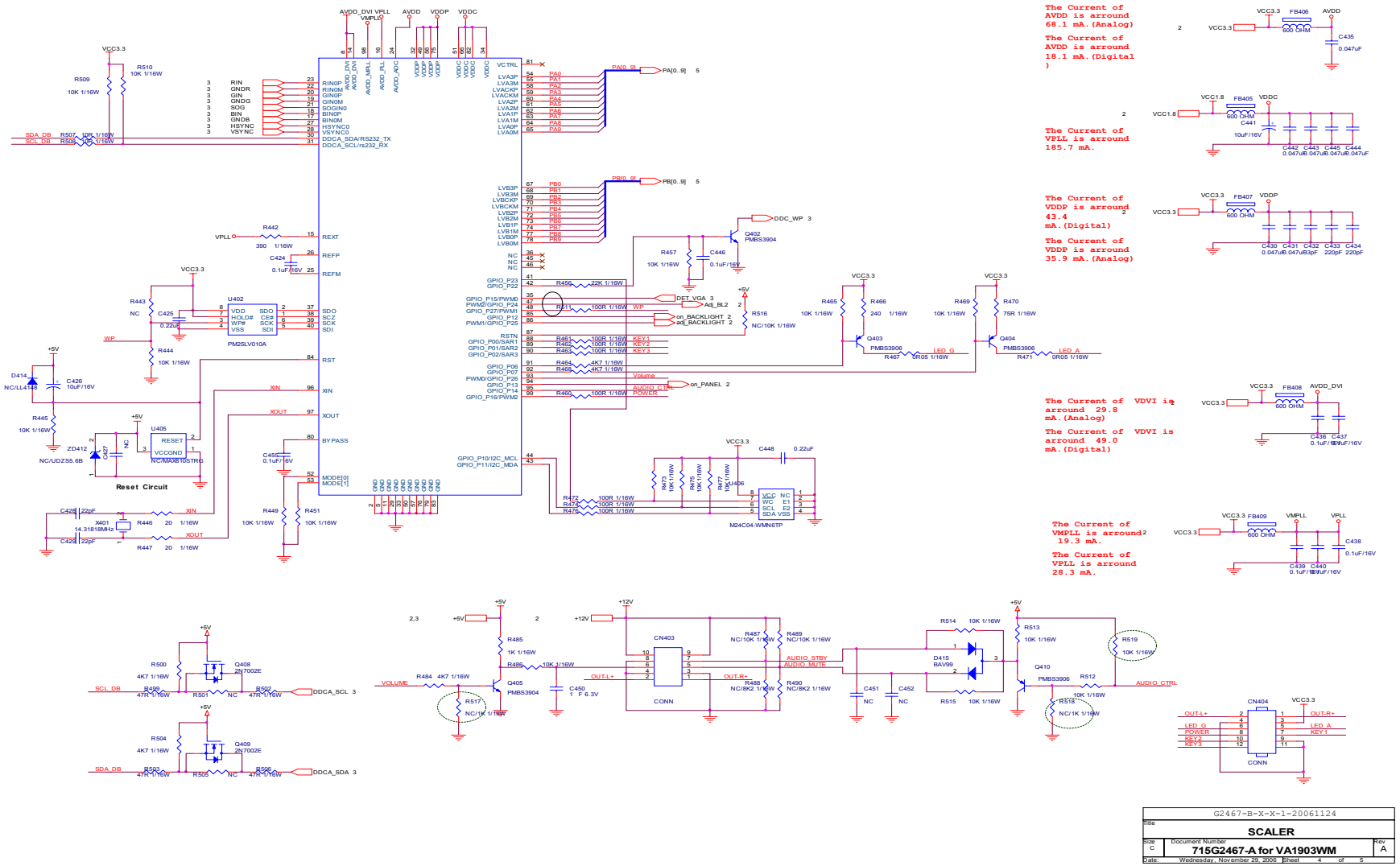
G2467-B-X-X-1-20061124		
Title: Power		
Size: B	Document Number: 715G2467-A for VA1903WM	Rev: A
Date: Wednesday, November 29, 2006	Sheet 2 of 5	

11.3 Input

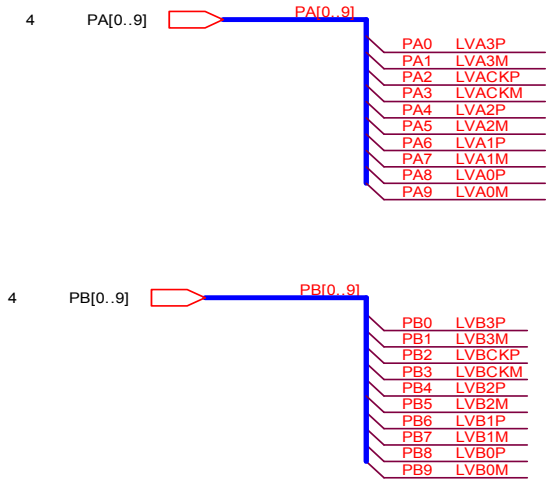


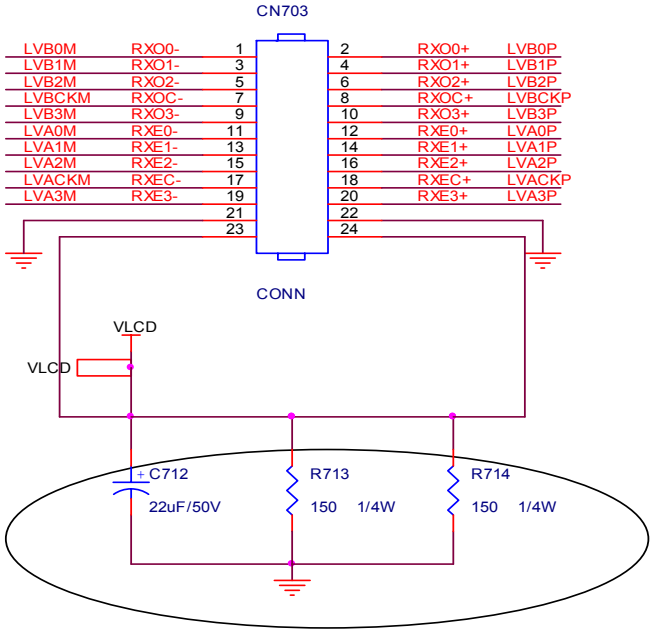
G2467-B-X-X-1-20061124		
Title: INPUT		
Size: B	Document Number: 715G2467-A for VA1903WM	Rev: A
Date: Wednesday, November 29, 2006	Sheet 3 of 5	

11.4 Scaler


The Current of AVDD is around 68.1 mA.(Analog)
The Current of AVDD is around 18.1 mA.(Digital)
The Current of VPLL is around 185.7 mA.
The Current of VDDP is around 43.4 mA.(Digital)
The Current of VDDP is around 35.9 mA.(Analog)
The Current of VDVI is around 29.8 mA.(Analog)
The Current of VDVI is around 49.0 mA.(Digital)
The Current of VMPLL is around 19.3 mA.
The Current of VPLL is around 28.3 mA.
Reset Circuit
SCALER
715G2467-A for VA1903WM
Wednesday, November 29, 2006

11.5 Panel Interface

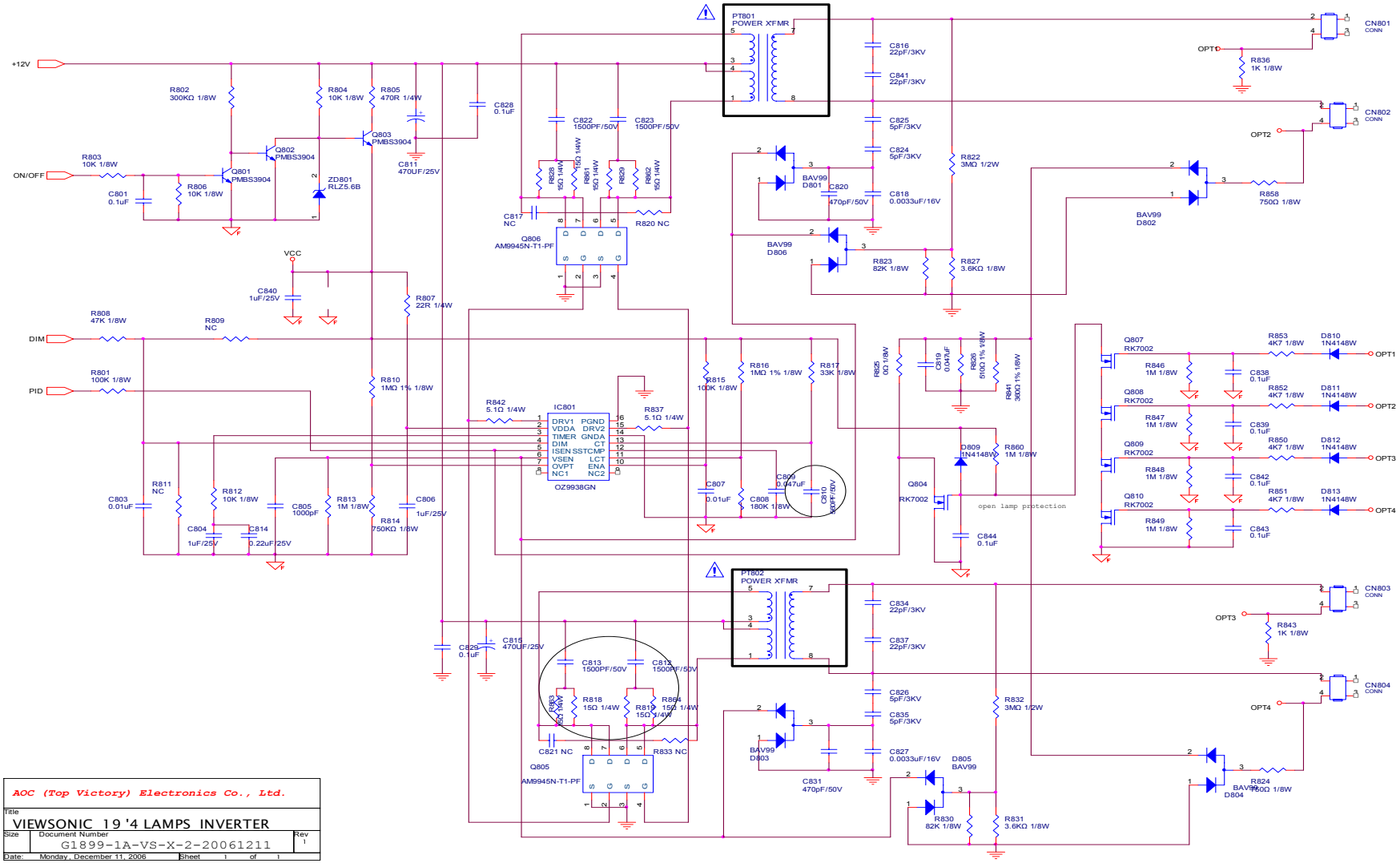




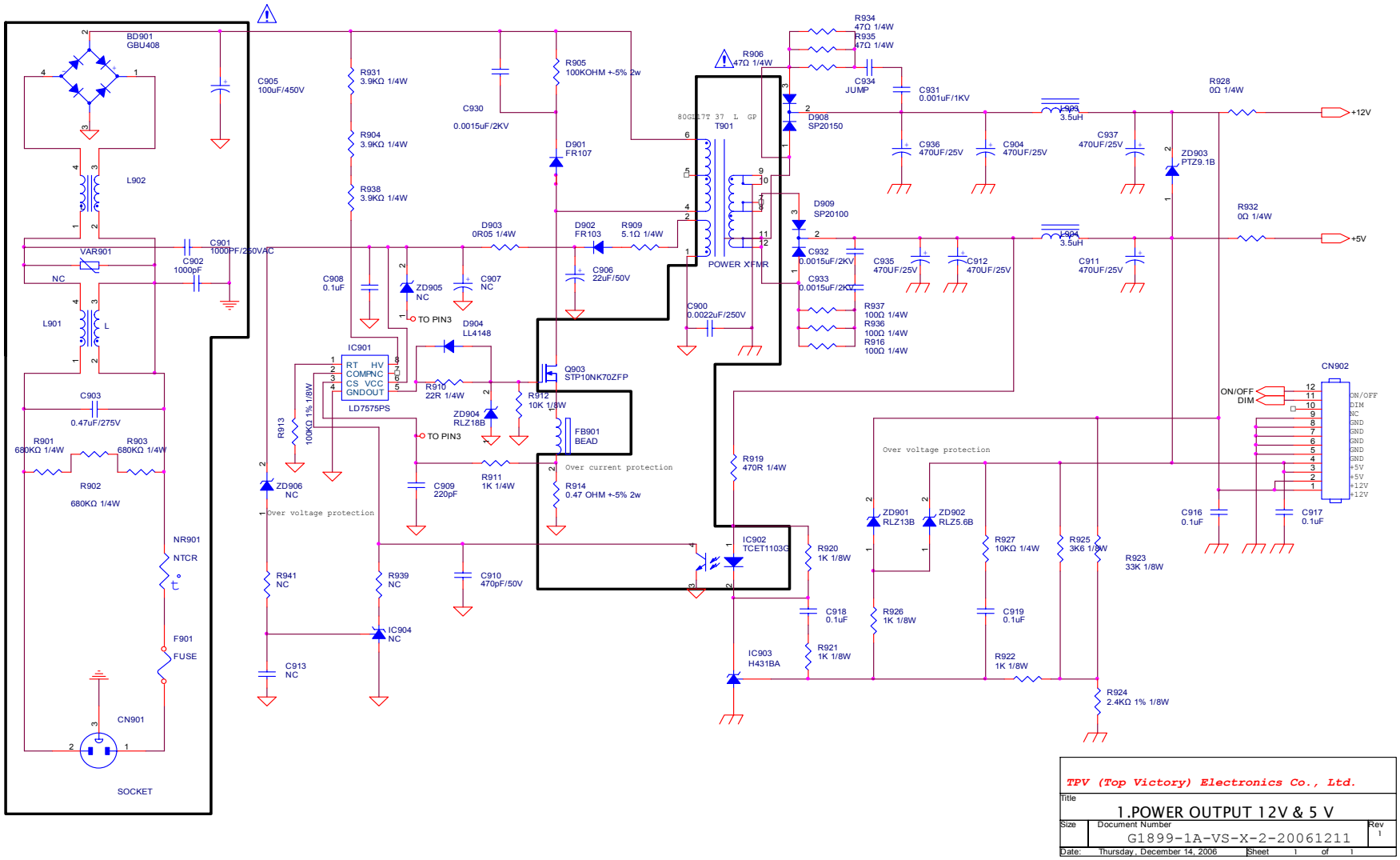
The type of R713 & R714 is 1206

G2467-B-X-X-1-20061124		
Title: PANEL INTERFACE		
Size: A	Document Number: 715G2467-A for VA1903WM	Rev: A
Date: Friday, November 24, 2006	Sheet 5 of 5	

11.6 Inverter

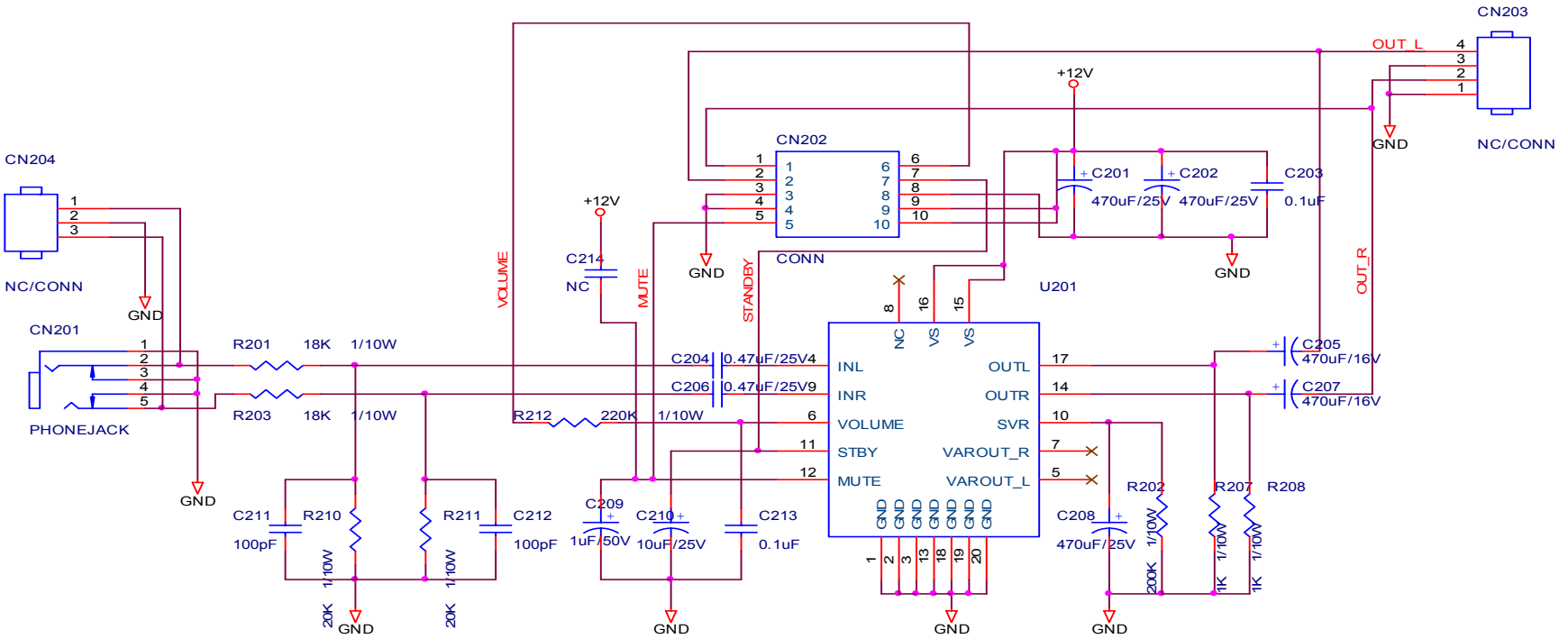


11.7 A-D Power



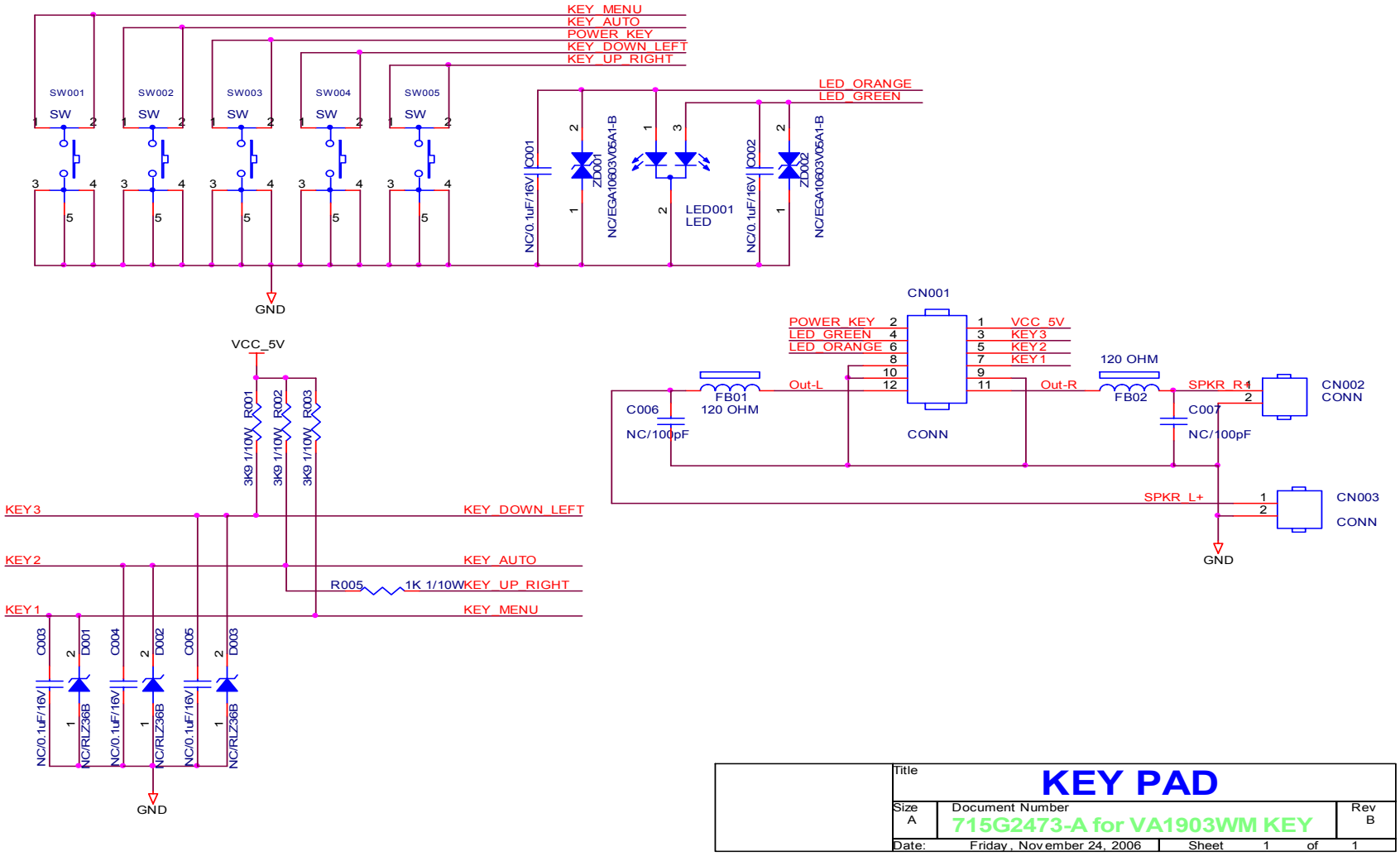
Confidential - Do Not Cop

11.8 Audio



Title	715G2472-A For VA1903WM AUDIO		
Size A	Document Number <Doc>		Rev 1
Date: Monday, November 27, 2006		Sheet 1 of 1	

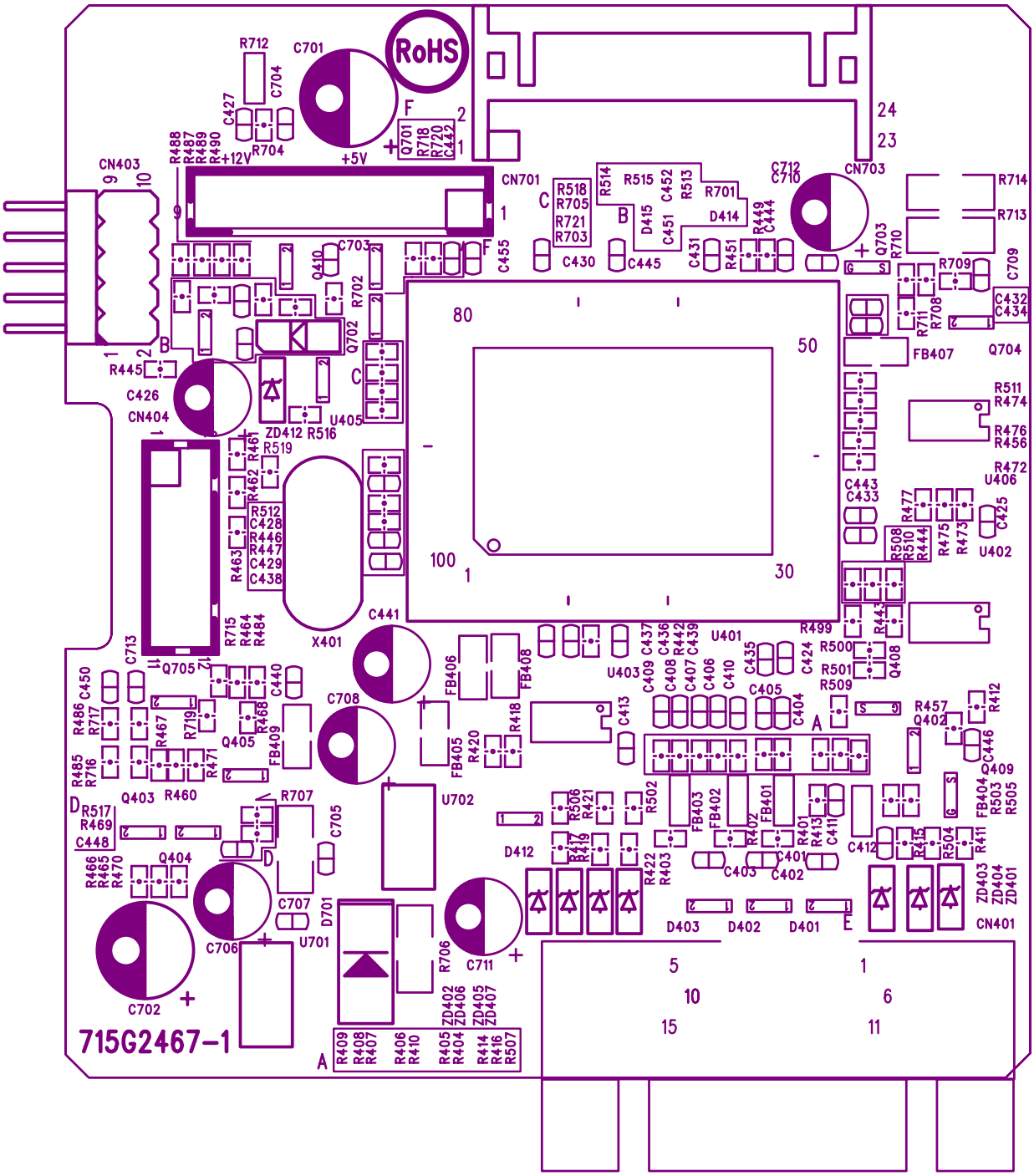
11.9 Key Pad



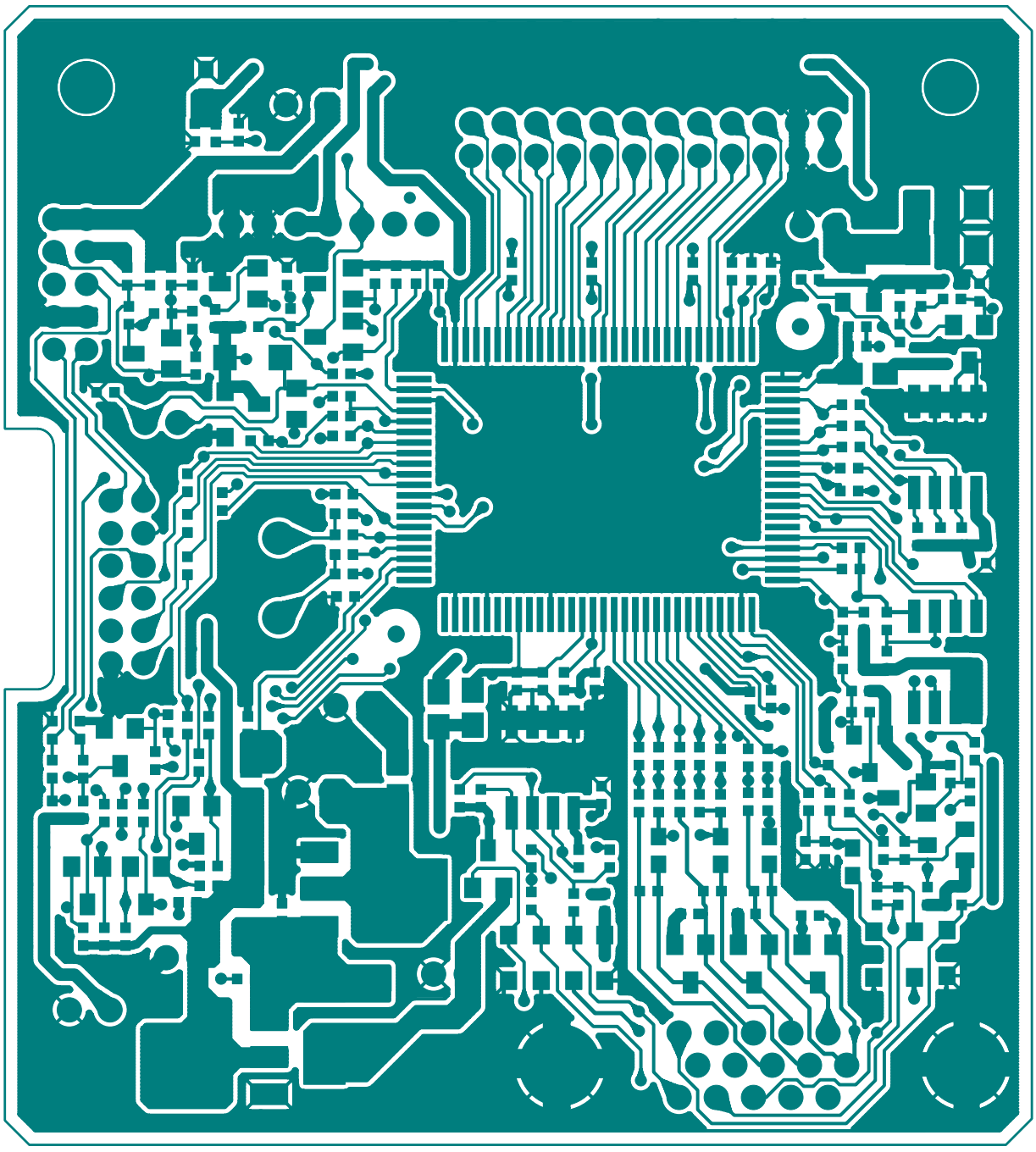
	Title: KEY PAD		
	Size: A	Document Number: 715G2473-A for VA1903WM KEY	Rev: B
	Date: Friday , November 24, 2006	Sheet 1 of 1	

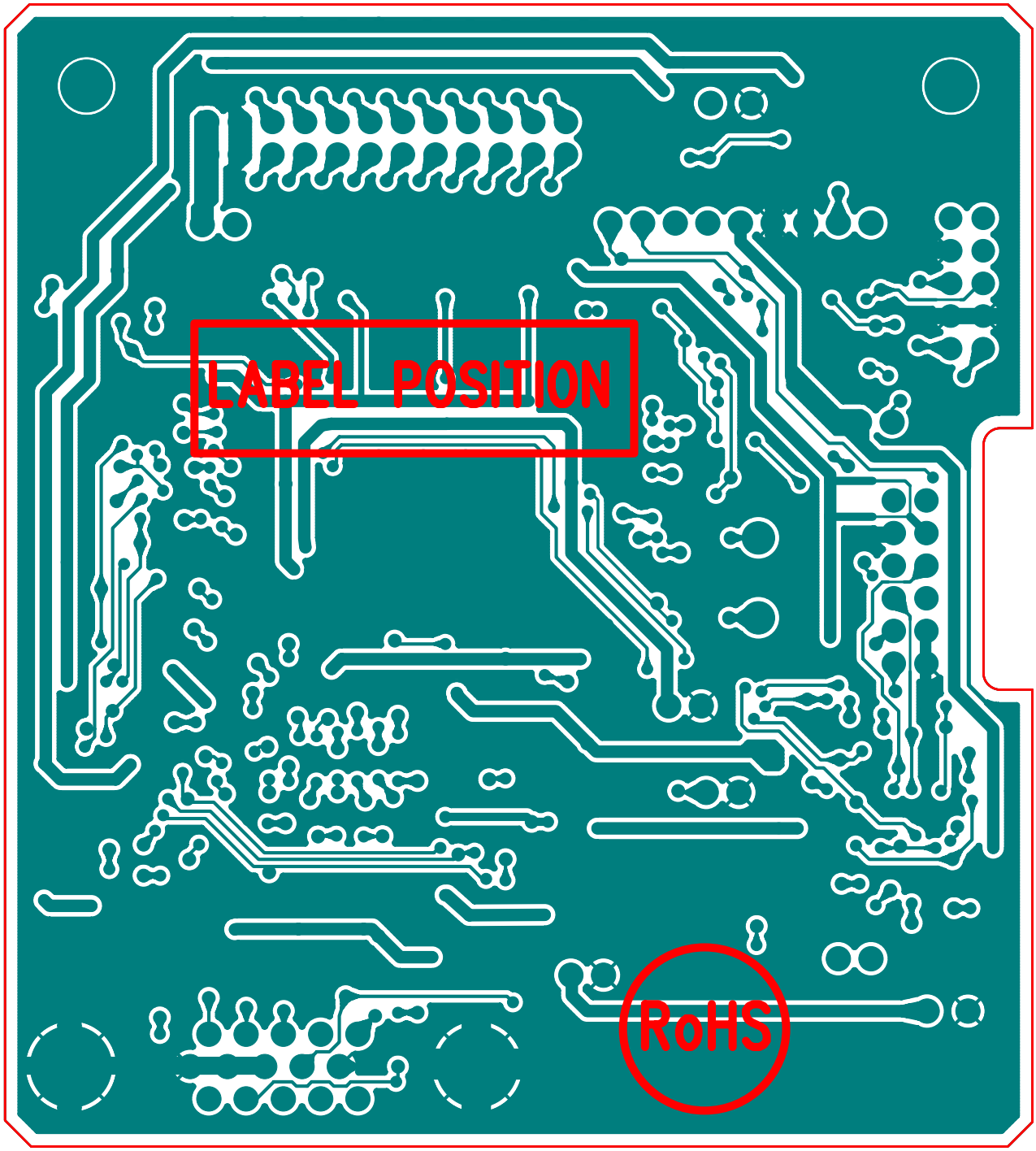
12. PCB Layout Diagram

12.1 MAIN BOARD PCB TOP VIEW

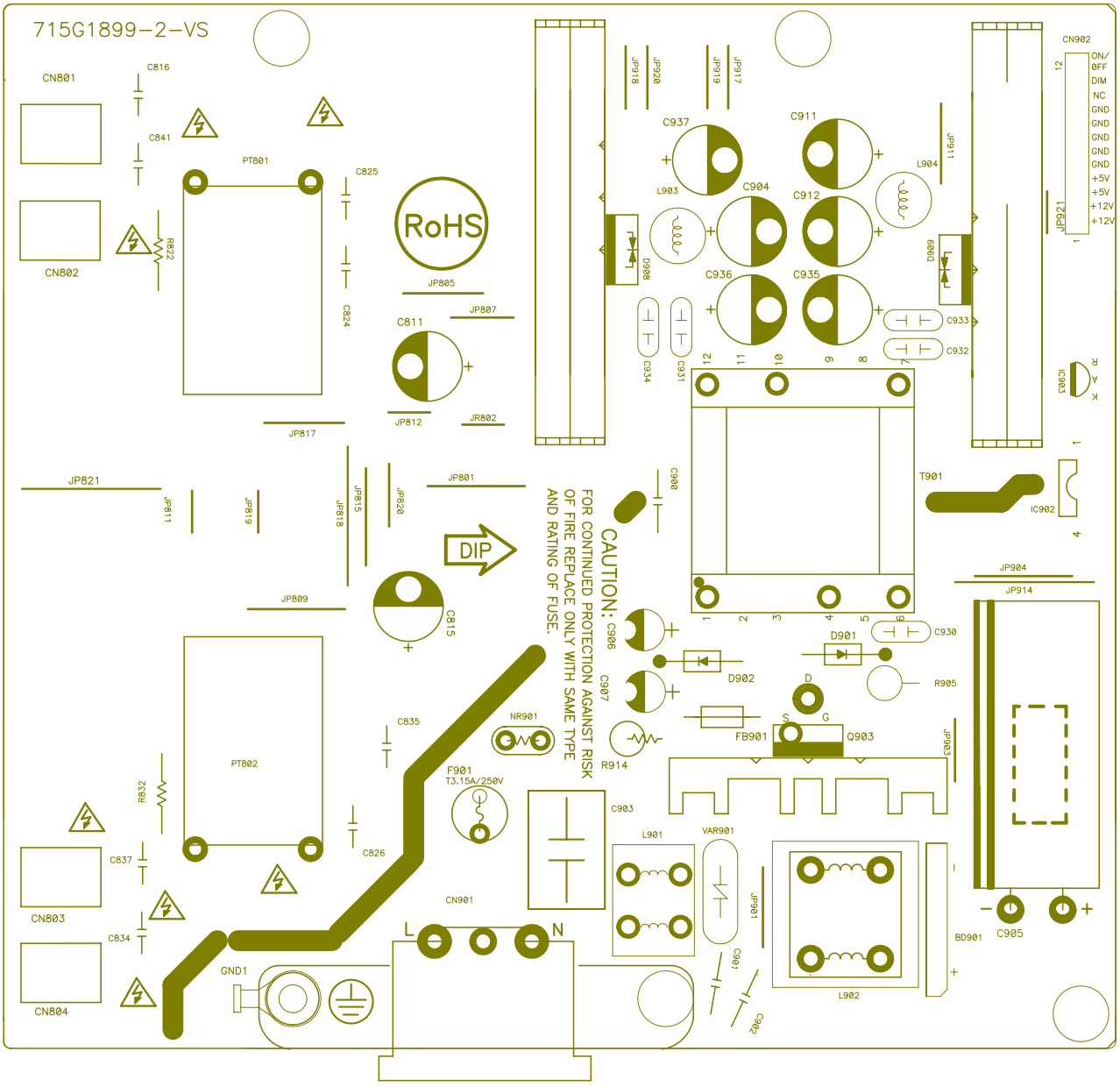


12.2 MAIN BOARD PCB BUTTON VIEW

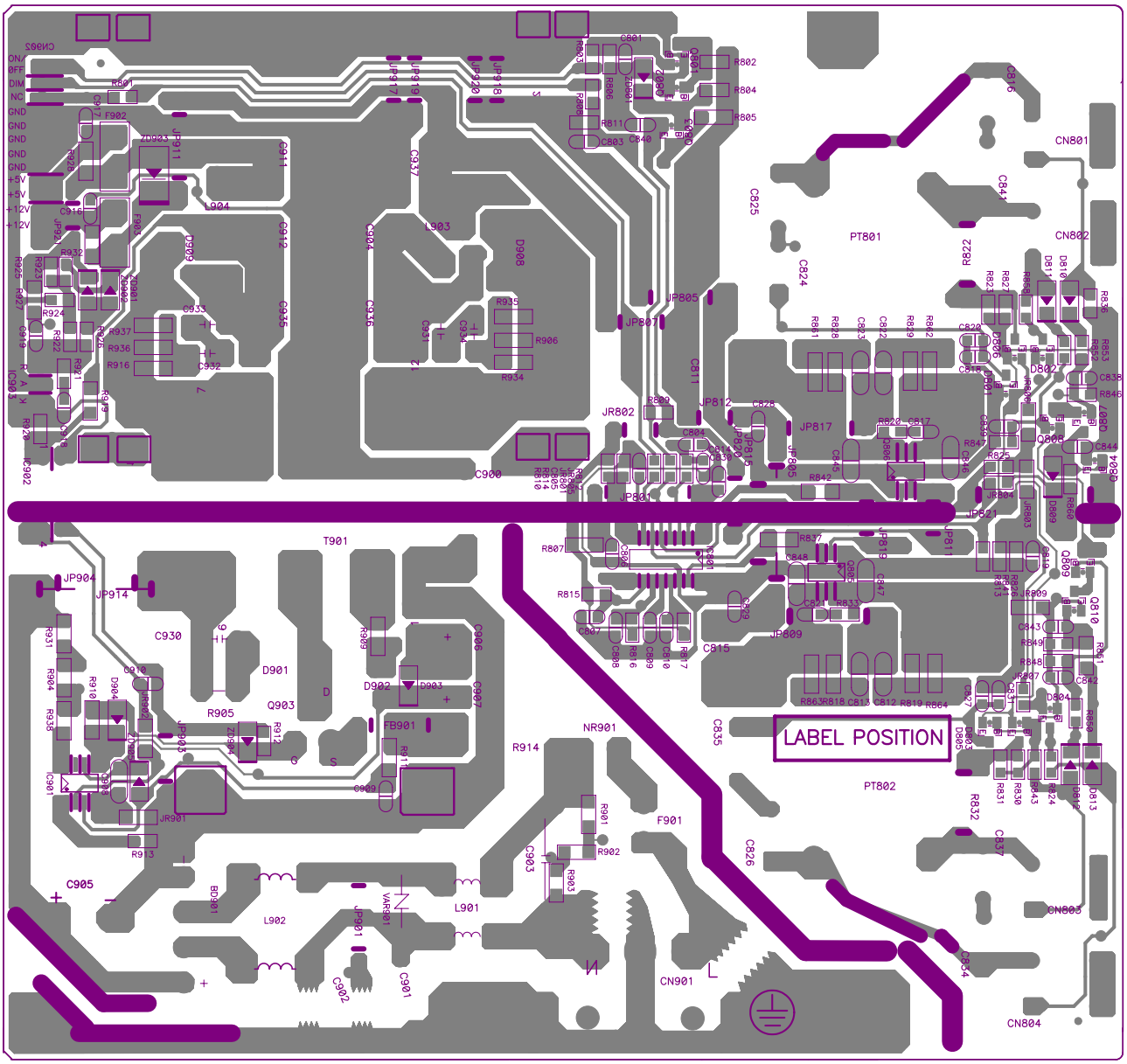



LABEL POSITION
RoHS

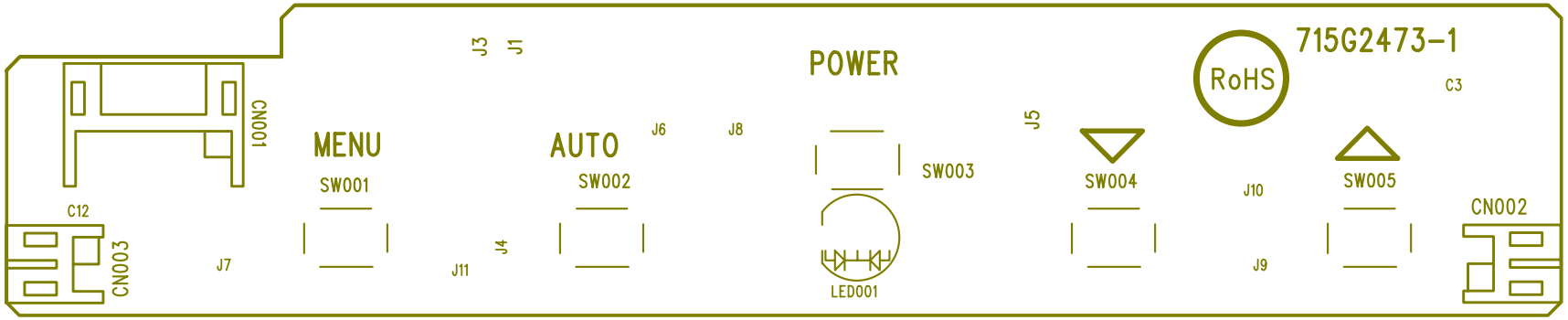
12..3 POWER PCB TOP VIEW



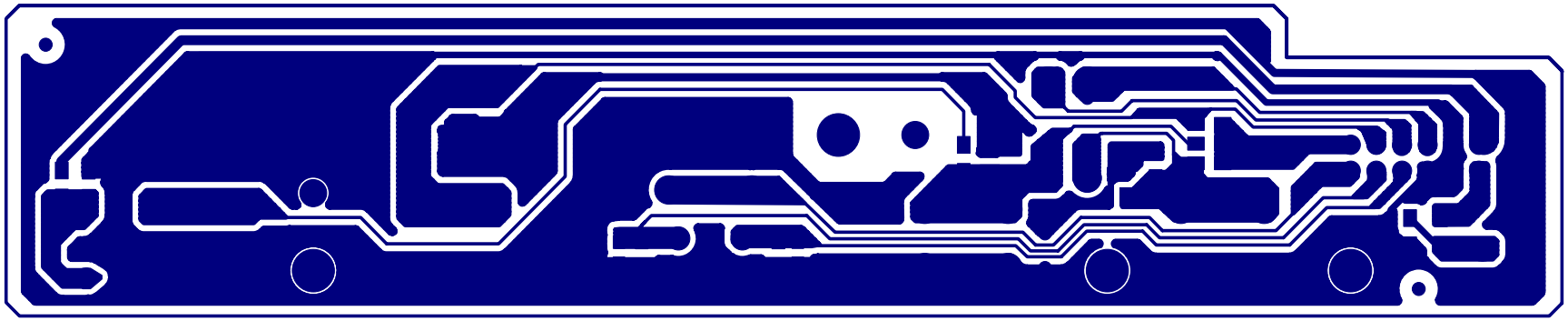
12.4 POWER PCB BUTTON VIEW



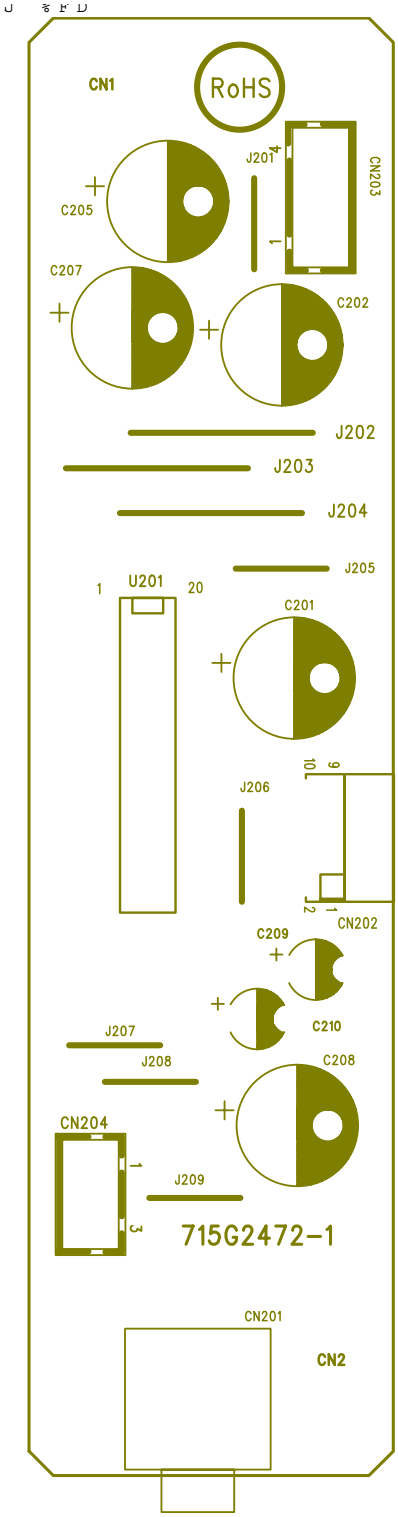
12.5 KEY BOARD TOP VIEW

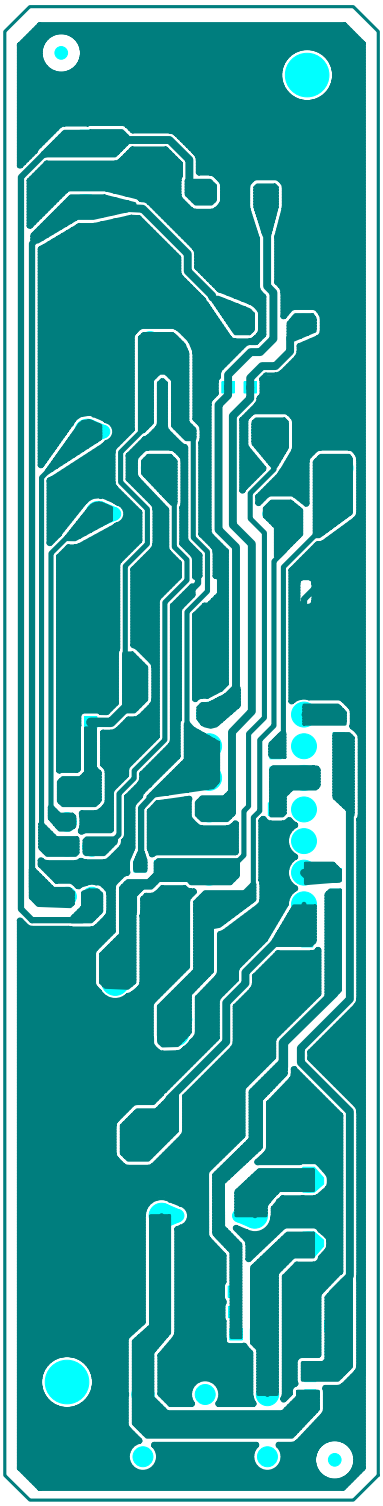


12.6 KEY BOARD BUTTON VIEW



12.7 AUDIO PCB TOP VIEW & BUTTON VIEW





* *Reader's Response* *

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Thank you in advance for you feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content after reading **VA1903wb/VA1903wm** Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions And Safety Notice				
2. Specification				
3. Front Panel Control and Indicators				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram And Spare Parts List				
9. Block Diagram				
10. Schematic Diagram				
11. PCB Layout Diagram				

B. Are you satisfied with the **VA1903wb/VA1903wm** Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any opinion and suggestion about this Service Manual?

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